

January 5, 1959

PURCHASING

The Methods and News Magazine for Industrial Buyers

1975

1970

1965

1960

1950

PLAN FOR

Purchasing Progress

The 1959 Business Outlook page 7 The Challenge to Purchasing page 60
Materials Management (A New Series)..... page 64 Table of Contents page 5

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A technical drawing of a Microsize UNBRAKO Socket Cap Screw. It includes a top view showing the hexagonal base and a side view showing the threaded shaft and the hexagonal head. Dimensions are indicated with leader lines and arrows.

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	NC	NF		NC	NF	
#0	A .096	80	1/4	2.0		.21
	B .060	80	3/4	2.0		.22
	D .060	80	1/4	2.0		.26
	F .050	80	3/4	2.0		.33
#1	A .118	72	1/4	3.5		.31
	B .073	72	3/4	3.5		.36
	D .073	72	1/4	3.5		.42
	F .050	72	3/4	3.5		.53
#2	A .140	56	3/4	6.0		.54
	B .086	56	1/4	6.0		.61
	D .086	56	3/4	6.0		.76
	F 1/4	56	1/2	6.0		.91
#3	A .161	48	3/4	8.5		.77
	B .099	48	1/4	8.5		.87
	D .099	48	3/4	8.5		1.07
	F 3/4	48	1/2	8.5		1.27

HEAT-TREATED ALLOY STEEL Microsize UNBRAKO Socket Set Screws Class 3A Threads—Plain Cup Point

Diameter		Threads per inch		Length	Recommended Installation Torque in Inch-Pounds		Weight per 1000 in Pounds
		NC	NF		NC	NF	
#0	D .060 F .028		80	1/4		.5	.03
			80	3/4		.5	.04
			80	1/4		.5	.05
			80	3/4		.5	.06
			80	3/4		.5	.08
			80	1/4		.5	.11
#1	D .073 F .035		72	1/4		1.5	.04
			72	3/4		1.5	.06
			72	1/4		1.5	.08
			72	3/4		1.5	.11
			72	3/4		1.5	.13
			72	1/4		1.5	.19
#2	D .086 F .035		56	1/4		1.5	.05
			56	3/4		1.5	.07
			56	1/4		1.5	.107
			56	3/4		1.5	.15
			56	3/4		1.5	.19
			56	1/4		1.5	.273
#3	D .099 F .050		48	3/4		5.0	.10
			48	1/4		5.0	.135
			48	3/4		5.0	.18
			48	3/4		5.0	.235
			48	1/4		5.0	.32
			48	1/4		5.0	.32

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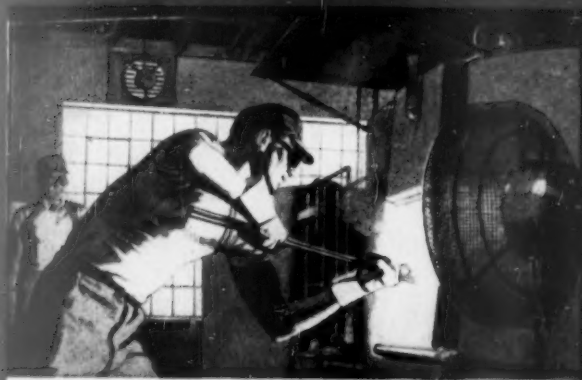
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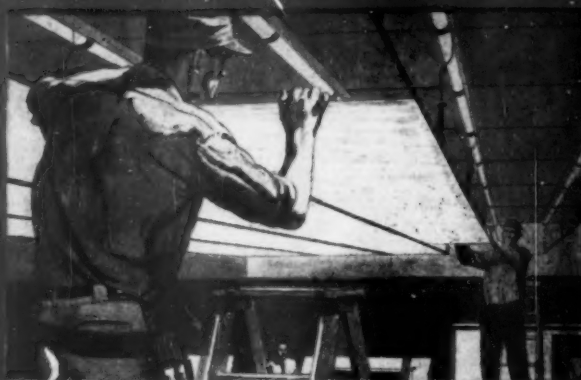
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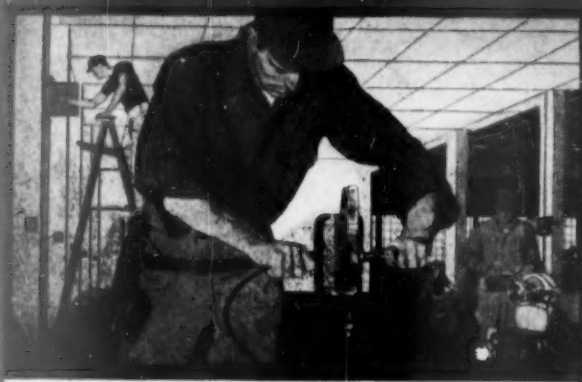
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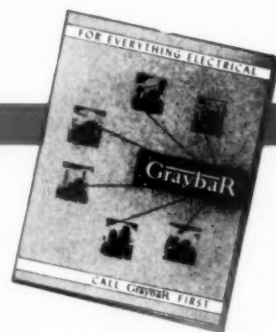
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PURCHASING

The Methods and News Magazine For Industrial Buyers

JANUARY 5, 1959
VOLUME 46, No. 1

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President

RAY RICHARDS
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JANUARY 5, 1959

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Pulse of Business

A Year Of Recovery

What kind of a year will it be? A year of tremendous challenge for purchasing agents—and one that will present many opportunities for advances in creative purchasing. The general business outlook can be summed up in these few words: better in almost all areas.

A year ago we were in the midst of the recession. The big problem for P.A.'s was maintaining efficient operations in the face of sharply declining sales and reduced inventories. Their success in this difficult task is documented by the speed with which we rebounded in the last six months of 1958.

Durable goods producers bore the brunt of the 1957-58 inventory recession. That's why their excellent '59 prospects for recovery are so important to the entire economy. A sharp pick-up in that sector will beef up all industry—and, of course, eventually mean more dollars in everyone's pocket.

This is the PURCHASING Magazine forecast for some of the major industries in 1959:

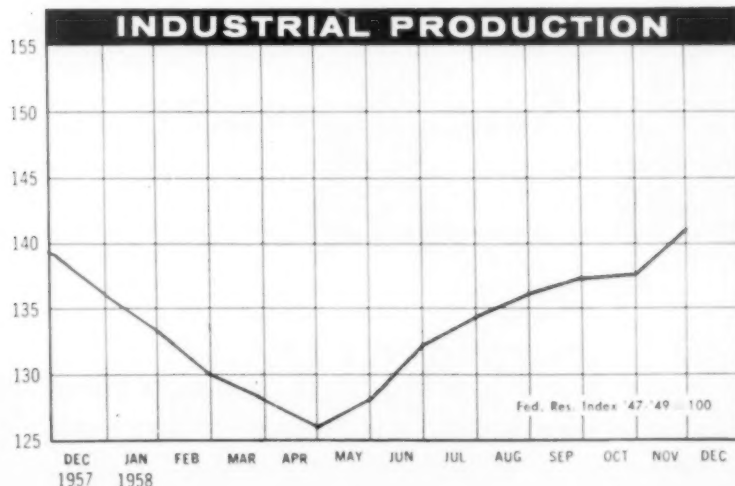
Auto Sales To Rise Sharply

Automobiles: The auto industry will sell around 5.4 million cars in 1959. That's over a million more cars than the disappointing total notched last year—and this 30% rise will mean improved business for scores of industries that supply automotive parts and accessories.

The '59 models have gone over well with car buyers so far, with sales of most makes up sharply. If the Big Three decide to bring out a small car later in the year, it will be still another spur to greater auto sales—at least at the outset.

Steel: 1959 ingot production will be about 110 million tons. The 1958 total was 85 million tons, and the record year of 1955 saw the nation's steel mills turning out 117 million tons. (Turn Page)

The Industrial Production Index rose three points in November to 141. It is now only four points below the pre-recession high of 145.



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Purchasing Managers' Stand-by



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Shown here are a few of the widely stocked Crane lines—a reminder to call your Crane supplier for piping materials.

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Pulse of Business

Purchasing executives can be assured of ample steel supply—at least for the first half of the year. '59 capacity will be 146 million tons, so that production will represent around 75% of capacity. If the steelworkers strike on July 1, however, the supply situation can change overnight.

Construction: About \$52 billion worth of construction will be put in place this year, up 7% from 1958. But some of this work was contracted for last year or even earlier. Actual dollar value of major 1959 contracts let for future construction should be around \$35.5 billion.

Public construction—especially highways—will be the bulwark of the industry this year. Housing starts should be the same as 1958—roughly 1.2 million units.

Aluminum: Domestic shipments in 1959 will total over 2 million tons. In 1958, 1.75 million tons were delivered to purchasing agents.

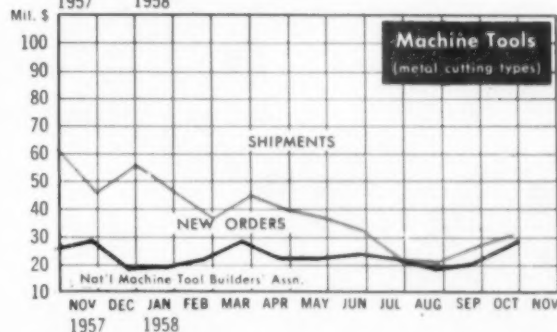
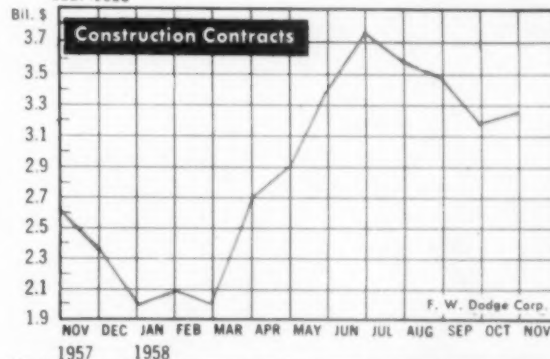
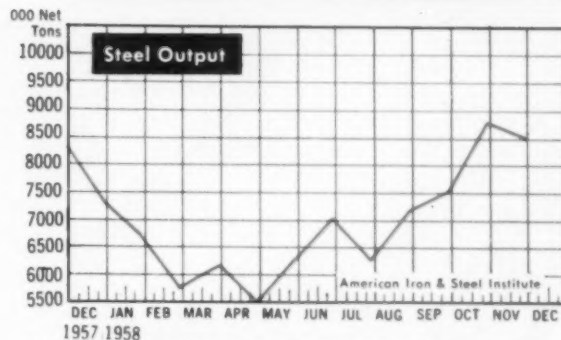
Aluminum, too, is fighting the battle of oversupply. Present industry capacity is 2.1 million tons—but projects now under construction will boost capacity by another 500,000 tons in the next few years.

Appliances: Consumer appliances suffered along with automobiles when the American public tightened its purse strings in '58. For '59 the sales outlook is much improved.

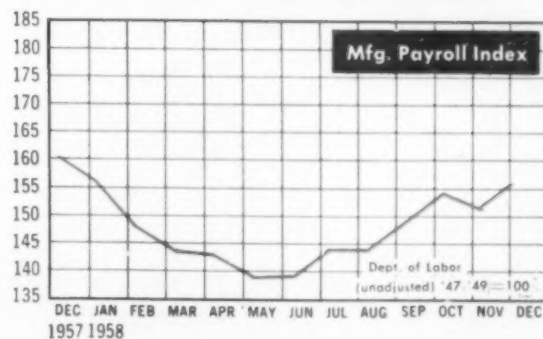
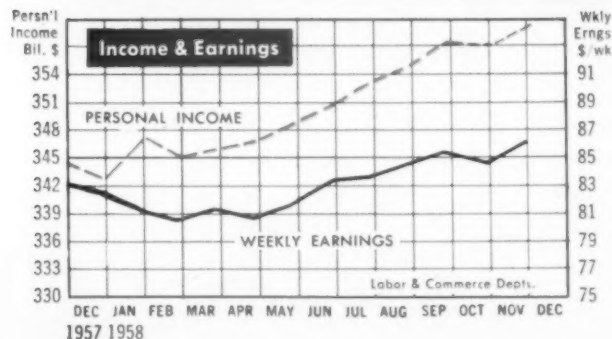
Pent-up demand will help the appliance manufacturers considerably. Their finished inventories are down and they'll most likely keep their production this year in line with anticipated sales.

Machinery: '59 will be a better year, but sales will still be subnormal. It looks like it won't be

PRODUCTION



LABOR



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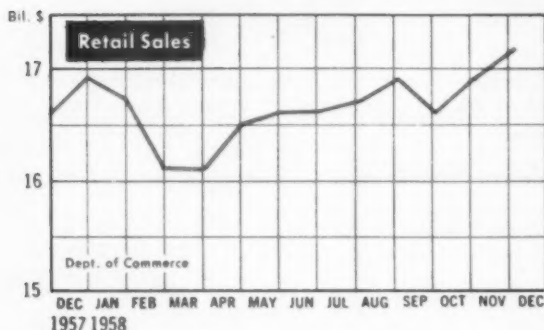


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TRADE



until 1960 at the earliest before this industry really recovers.

Machine tool shipments will increase around 15% from the low levels of 1958. Farm machinery will rise between 10% and 15%, while electrical machinery shipments are now coming forth at a faster pace.

Retailing: Both department store and food store sales will rise in 1959. The general business recovery will put more money into the hands of more people—and give them the opportunity to spend it on personal items.

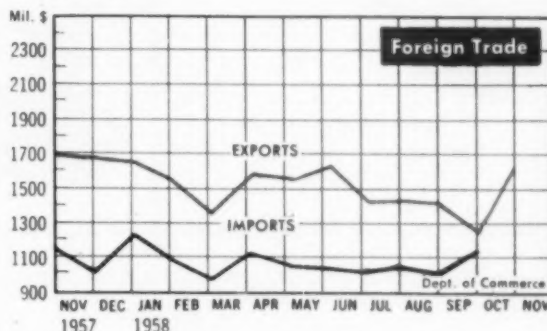
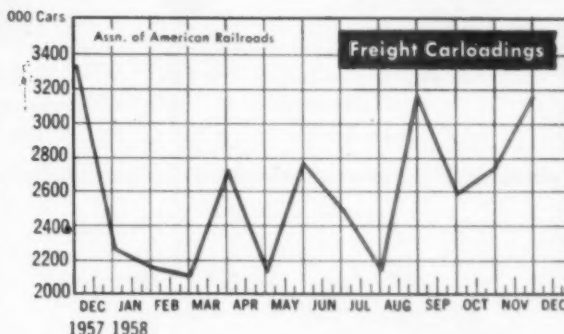
Most of the sales increase will be in the first half. Possible strikes in some key industries could slow down the merchandising area in the last six months of the year.

Chemicals: Sales by the chemical industry will show a sharp rise in 1959. Consumer acceptance of newly developed products and better overall business conditions should result in a substantial rise to around \$34 billion this year.

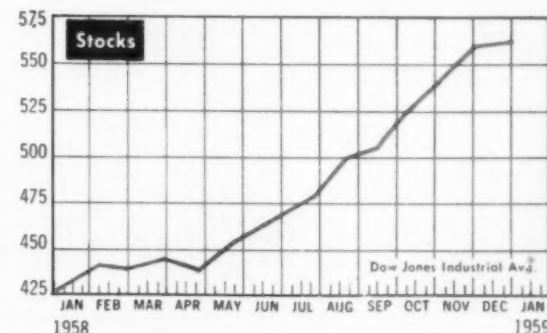
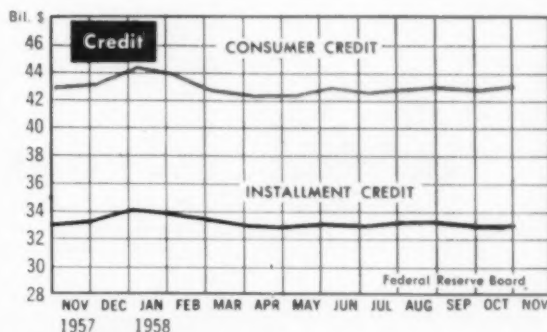
Petroleum: Domestic demand will rise about 5%. In addition to the oil companies, those firms that supply oil country goods will also improve their business in '59. Gas companies will profit from the better business situation, as will the pipeline and distributing outfits.

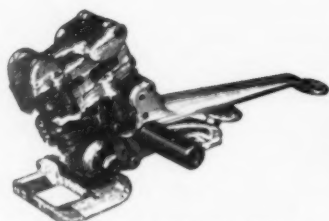
Rubber: Domestic consumption of rubber will rise about 10% in 1959 to 1.5 million long tons. However, United States capacity will also increase to 1.7 million long tons by the end of the year.

Don't expect any miraculous economic spurt in 1959, like the one we had in 1955. But you can look for a year of general prosperity, higher income, and better business conditions for almost everyone.

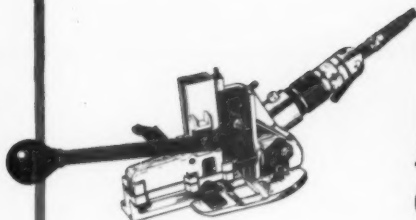


FINANCE

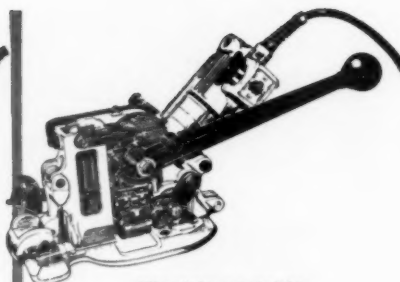




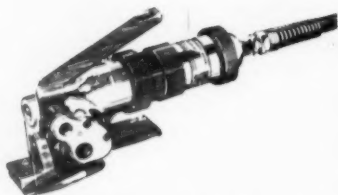
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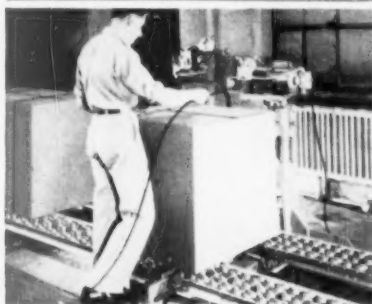


First in steel strapping

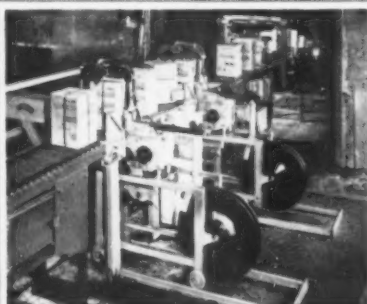
SIGNODE STEEL STRAPPING CO.

2676 N. Western Avenue, Chicago 47, Illinois

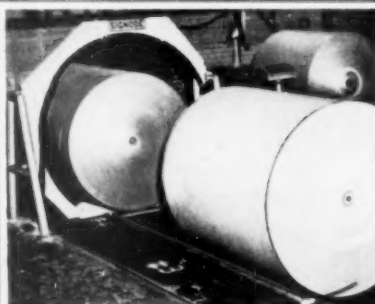
Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto



Power strap feeders
Model PSF



Fully automatic carton
strapping machines—Model M2N



Fully automatic roll and coil
strapping machines Model M2ORB

For More Information Write No. 161 on Inquiry Card—Page 32

The P.A.'s Outlook

- Most P.A.'s Still Predict Better Business
- But Optimism Tapers As Recovery Slows
- Local Associations Warn of Inflation

THE MAJORITY of purchasing agents surveyed by PURCHASING Magazine's Business Confidence Poll still expect business conditions in the next three months to improve.

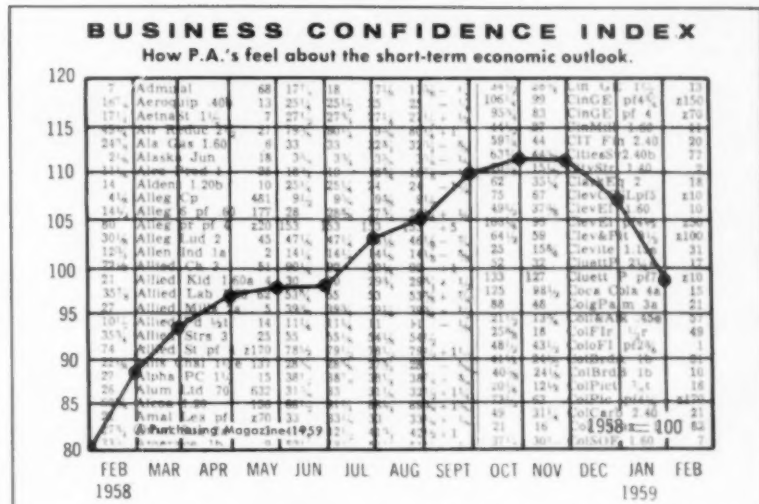
However, the percentage who expect an improvement has tapered off somewhat. In January, only 61% predict better business in their industries, compared with 78% the previous month.

These figures have been transposed to a new statistical index. The base of 100 equals the average level of purchasing agents' confidence in business during 1958. This was determined from monthly surveys made throughout the year by PURCHASING Magazine. Since the way P.A.'s feel about the short term economic outlook helps determine what they do, the index is valuable as a lead economic indicator.

The January index stands at 98, a nine point drop from the previous month. Some of the reasons suggested by P.A.'s for their slightly dampened enthusiasm are:

- Dissatisfaction with the slow speed of recovery from the recession.
- Worry over inflationary forces that are creeping back into the economy.
- Anxiety over the still high unemployment figure — now ranging around 3.8 million people.

This same backing off from the overwhelming optimism of



Purchasing Magazine's new Business Confidence Index—designed to measure purchasing agents' confidence in the short-term business outlook—dropped nine points in January to 98 (1958 = 100—the average confidence level for the year). Although a majority of purchasing agents expect business to be better in the next three months, the percentage who feel this way is slightly less than in December.

the last couple of months was noted in reports from the National Association of Purchasing Agents and the Chicago, Pittsburgh, and Canadian local associations.

The N.A.P.A. notes "a continuing lull in textile, lumber, and machine tool demands." It adds "there is still considerable unemployment in many industries, with no indication of any immediate improvement."

According to the N.A.P.A. Business Survey Committee, many purchasing executives continue to be concerned over narrow profit margins. But the report adds that "price inflation appears to be very gradual."

The Chicago association has some discouraging news to report about backlogs. "For the first time in several months," it says, "an increasing number of reporting companies show lower backlogs."

It also warns that "upward pressures continue to reflect influence on prices."

Starting to Slip

From the Pittsburgh group comes this word: "The slow and steady increase in business in the tri-state area has all but come to a halt—and in some corners it has started to slip."

It also reports that "the employment picture is not good." Inventories in that section of the country dropped around 9% from the previous month.

The Canadian association is a bit more optimistic. Its survey shows "a continuation of the trend toward recovery which commenced early in the year."

But it points out "the specific results . . . betray a hesitation in that the rate of improvement has slowed slightly." It rates the recent recovery as "gradual, modest, and fluctuating."



we're rolling!

NOW...AT INLAND...500,000 ADDITIONAL TONS CAPACITY FOR COLD ROLLED SHEET PRODUCTS . . . a half-million more tons of the same uniformly dependable steel that has made *Inland Quality* the recognized standard among manufacturers throughout the great Midwest. Inland's giant, new 4-stand tandem mill, most powerful of its size in the industry, is part of Inland's program of expansion, keeping pace with the growth of Midwest manufacture. New pickling, continuous normalizing, annealing and tempering facilities do their part in producing this quality steel for your use. This new capacity means better service for you from Inland.

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		<p><i>Other Members of the Inland Family:</i> JOSEPH T. RYERSON & SON, INC. INLAND STEEL PRODUCTS COMPANY INLAND STEEL CONTAINER COMPANY* INLAND LIME & STONE COMPANY*</p>
		<p><small>*Division</small></p>

For More Information Write No. 162 on Inquiry Card—Page 32

Price Trends

- **Producers' Copper Stocks Lowest Since '56**
- **Lead Product Imports Are on the Rise**

METAL prices generally showed little change as 1958 came to a close. Many P.A.'s were waiting until '59 plans were clearer before going into the metals markets.

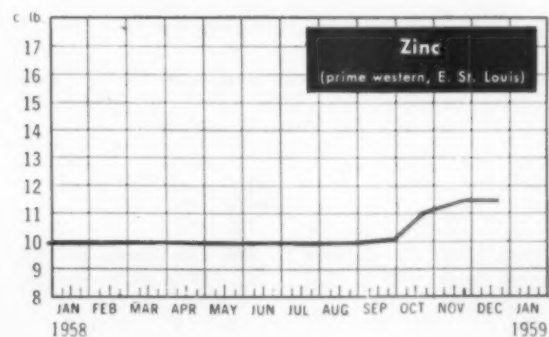
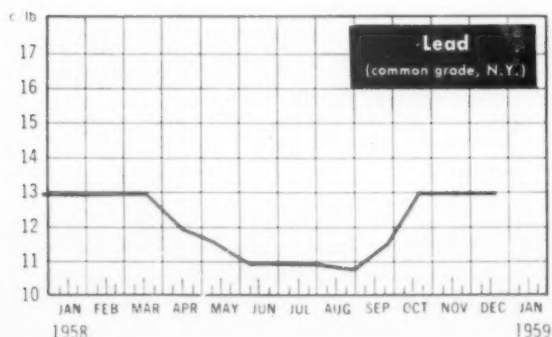
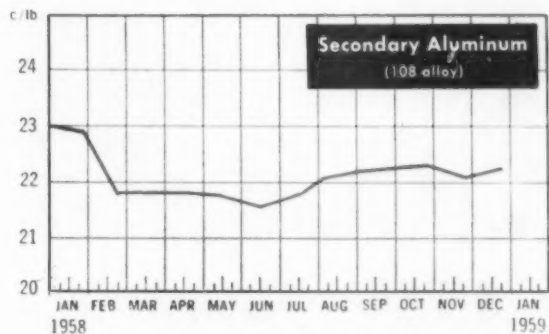
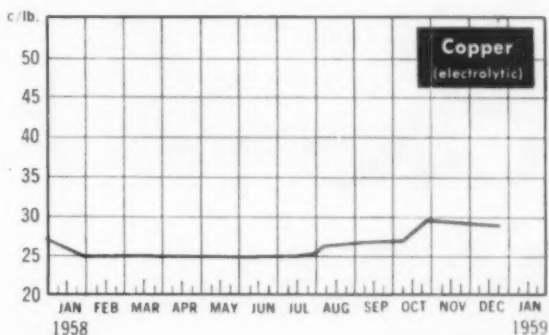
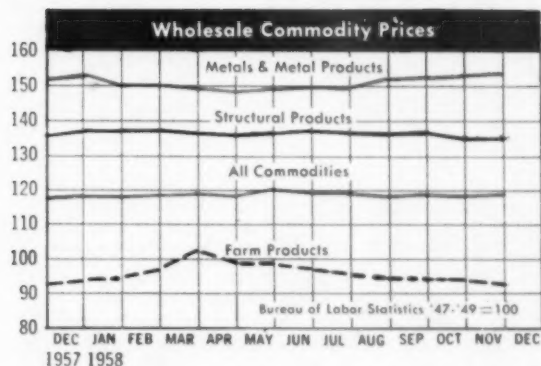
Here's how the situation shapes up in some of the more important commodities:

Copper: Purchasing agents have been buying copper at a rapid pace, building up heavily depleted inventories. According to the latest report by the Copper Institute, stocks are at the lowest levels in a few years. U.S. producers' stocks now amount to only a three-week supply, based on average deliveries in the September through November period.

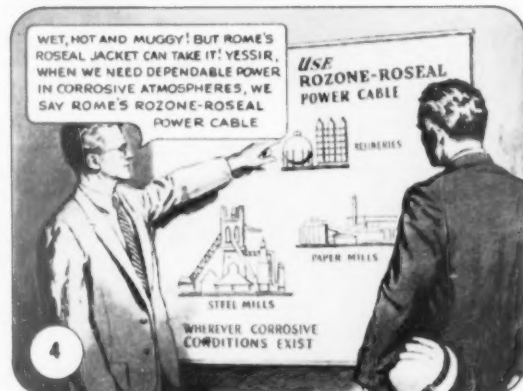
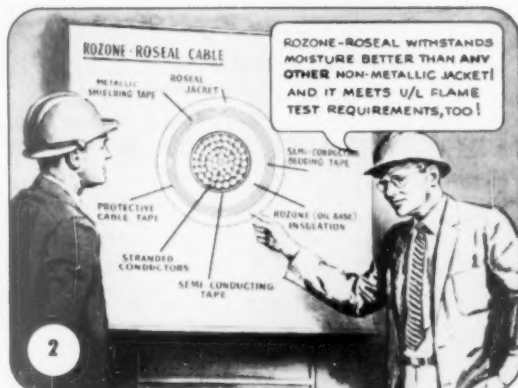
This can become a serious supply situation for P.A.'s if demand picks up further this month. Domestic stocks in the hands of producers were less than 94,000 tons at the end of November—the smallest since September 1956. Continuation of this trend might lead to a further increase in the copper price early in the year.

Lead: An increasing number of purchasing executives—especially in the Midwest—have stepped up their purchases of foreign-made semi-finished and finished lead products. These purchases have been made at prices substantially below those of domestic suppliers.

Despite the limitations placed by the government last October on imports of lead metals and ores, there is no restriction on manufactured products. Some P.A.'s have been able to



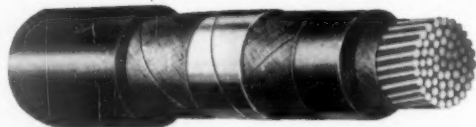
DANGER! CORROSION AT WORK...



A matter of FACT



Rozone insulation is high in dielectric and impulse strength and has excellent resistance to corona and ozone cutting.



Available in voltage ranges through 15 kv Rozone-Roseal preferred power cable may be installed in air, conduit, underground ducts, or directly in earth. Your choice of premium ozone-resistant insulations: Rozone (oil-base) or Rozone A (butyl-base). For complete information, contact your nearest Rome Cable representative and ask for Bulletin RCD-700. Or mail the coupon today.

ROME CABLE
C O R P O R A T I O N

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FREE BULLETIN describes the benefits of Rome's preferred high-voltage power cables.

ROME CABLE CORPORATION
Department 720, Rome, New York

Please send me a copy of the new Rome Cable Bulletin RCD-700.

Name

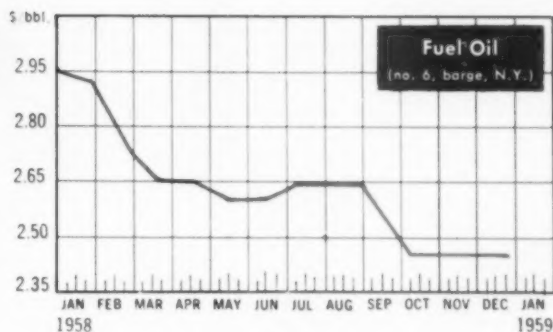
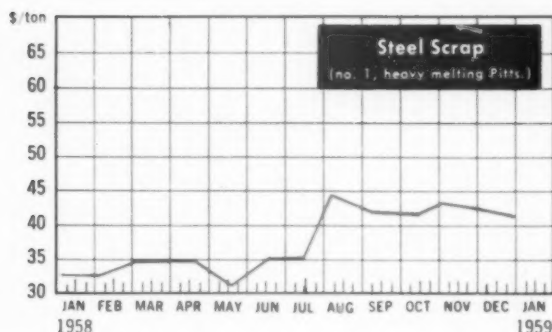
Title

Company

Address

Type of business

Price Trends



save almost four cents a pound on lead products by purchasing overseas.

Zinc: Another meeting of zinc producing nations will be held in New York in March to thrash out the problem of regulating exports and production. Two similar meetings—in London last September and Geneva in November—failed to provide any concrete solutions.

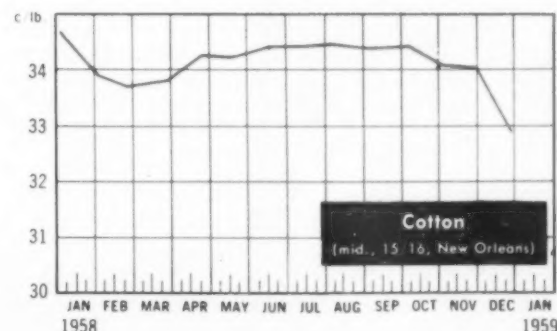
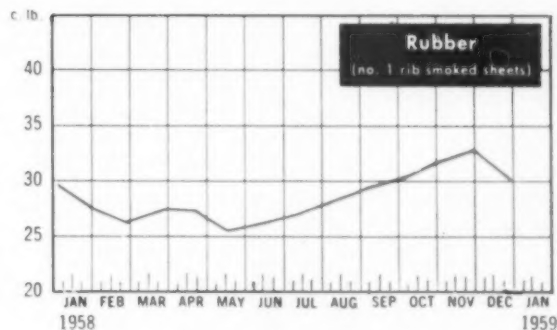
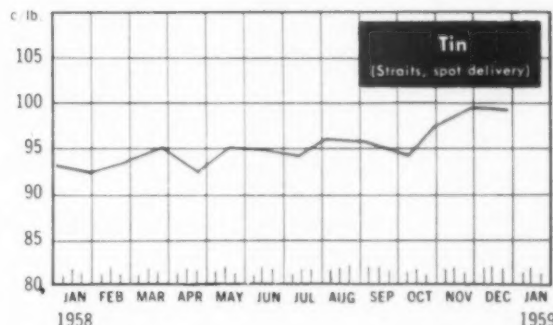
Deliveries of zinc to domestic purchasing agents totaled about 83,000 tons in November—roughly 10,000 tons less than the previous month. However, smelter production continued around the 65,000 ton mark, which resulted in an 18,000-ton cut in producers' stocks.

Tin: In both London and Singapore, trading in tin has been inactive recently. Bids from buyers have not been at a high enough level to attract interest and prices are steady.

The big question is still this: Will Russia join the International Tin Council as a full participating member? Once that mystery is decided either way, a certain amount of stability, that has been missing for quite some time, will return to the tin market.

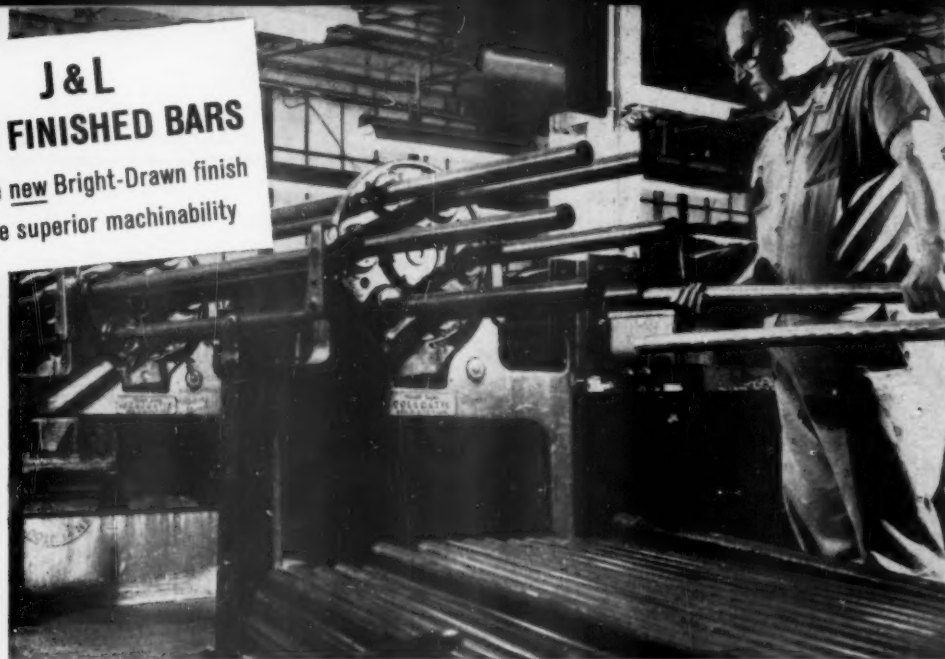
Aluminum: The self-administered price freeze by the aluminum suppliers has drawn praise from P.A.'s. Domestic fabricators are now assured that there will be no price boosts before July 1, and they can plan their production schedules accordingly.

However, the aluminum producers are starting to take steps to cut production in 1959. Already Aluminium Limited has announced a 10% production cutback at its Canadian smelters, and some of the other large companies are expected to follow suit in the near future.





J&L
COLD FINISHED BARS
with the new Bright-Drawn finish
provide superior machinability



J&L's B-1113 leaded steel permits 35% higher machining speeds in this multiple spindle screw machine operation at Singer Manufacturing Co., Elizabethport, N. J.

"J&L B-1113 leaded steel provides flawless finish, speeds machining of Singer sewing machine parts 35%"

"Flawless finish of 'Slant-O-Matic' hook assembly components machined from J&L B-1113 leaded steels and carefully polished prevents thread snags," according to officials of Singer Manufacturing Company.

With the "Slant-O-Matic" hook assembly moving at 3200 revolutions a minute, the slightest burr or tool mark on any part would snag the thread. Singer officials report the machined surfaces with J&L steel are "definitely easier to polish." They are now using leaded steel in over 100 components on the scores of industrial and household machines they manufacture.

"Use of cold finished leaded steel bars also speeds production 35% on our multiple spindle screw machines. And we get 25% longer tool life," Singer officials report.

Similar machining qualities and speed are possible in your operations with J&L controlled quality cold finished steel bars. A J&L steel specialist can recommend

exactly the right steel for any job from J&L's complete cold finished line. Chances are he can help you get improved finishes, higher cutting speeds and longer tool life.

Call your local distributor or write to Jones & Laughlin Steel Corporation, Dept. 498B, 3 Gateway Center, Pittsburgh 30, Pa.



The superior surface finish on hook assembly components prevents thread snags. Parts are machined from J&L leaded steel bars with the improved new Bright-Drawn finish.



Jones & Laughlin Steel Corporation

PITTSBURGH, PENNSYLVANIA

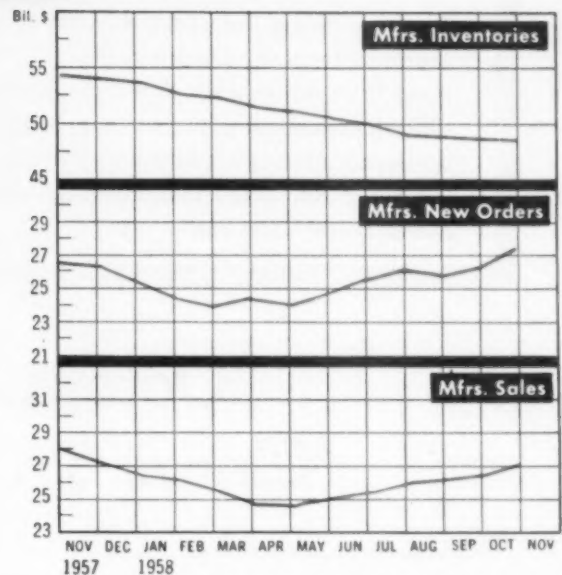
Sales, Inventories, Orders

● Slight Rise In Inventories Noted

THE END of the inventory recession finally showed up in the latest figures released by the government, but the increase in stocks was a slight one. Sales and new orders both rose.

Following a year of steady stock reduction, inventories rose \$4 million to \$49.3 billion. Manufacturers cut nearly \$5 billion worth of inventories in the last year, although the rate of decline slowed in recent months. The rise was due to an increase in purchased materials stocks, since further liquidation continued in finished goods.

Durable goods producers had a greater rate of increase in sales and new orders than non-durable companies. Sales were boosted primarily by the automobile output jump, while new orders got their big impetus from the entire transportation group.



Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)

	1957		1958			
	Sept.	Oct.	July	Aug.	Sept. (r)	Oct. (p)
All Manufacturing Industries.....	28,215	28,064	26,284	26,388	26,804	27,276
Durable-goods industries.....	14,132	13,932	12,256	12,385	12,723	13,013
Primary metal.....	2,182	2,224	1,917	1,984	2,065	2,189
Fabricated metal.....	1,547	1,535	1,454	1,482	1,593	1,564
Machinery.....	4,314	4,265	3,808	3,817	3,999	3,981
Transportation equipment.....	3,407	3,297	2,550	2,582	2,438	2,616
Lumber and furniture.....	940	930	836	832	850	885
Stone, clay, and glass.....	668	650	676	657	701	686
Non-durable-goods industries.....	14,083	14,132	14,028	14,003	14,081	14,263
Food and beverage.....	4,278	4,331	4,371	4,373	4,312	4,372
Tobacco.....	378	356	390	372	386	388
Textile.....	1,040	1,029	1,061	1,077	1,027	1,054
Paper.....	932	917	937	941	949	965
Chemical.....	1,951	2,002	1,979	2,003	2,071	2,071
Petroleum and coal.....	2,803	2,895	2,806	2,787	2,860	2,903
Rubber.....	481	490	478	438	n.a.	n.a.

Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)

	Sept.	Oct.	July	Aug.	Sept. (r)	Oct. (p)
All manufacturing industries.....	54,166	54,103	49,777	49,425	49,296	49,300
Durable-goods industries.....	31,820	31,754	28,311	28,066	28,048	27,979
Primary metal.....	4,344	4,356	4,122	4,110	4,043	4,004
Fabricated metal.....	3,123	3,143	2,814	2,777	2,842	2,893
Machinery.....	10,658	10,583	9,323	9,221	9,074	9,032
Transportation equipment.....	8,049	7,979	6,584	6,536	6,751	6,674
Lumber and furniture.....	1,777	1,880	1,773	1,742	1,732	1,722
Stone, clay, and glass.....	1,251	1,273	1,228	1,220	1,212	1,226
Non-durable goods industries.....	22,346	22,349	21,466	21,359	21,248	21,321
Food and beverage.....	4,684	4,725	4,706	4,638	4,598	4,660
Tobacco.....	2,000	1,980	1,836	1,838	1,838	1,857
Textile.....	2,631	2,625	2,550	2,524	2,499	2,439
Paper.....	1,410	1,423	1,413	1,418	1,405	1,412
Chemical.....	3,741	3,722	3,722	3,734	3,747	3,747
Petroleum and coal.....	3,597	3,623	3,314	3,274	3,271	3,282
Rubber.....	1,074	1,097	980	1,024	n.a.	n.a.

Manufacturers' New Orders Seasonally Adjusted (Millions of Dollars)

	Sept.	Oct.	July	Aug.	Sept. (r)	Oct. (p)
All manufacturing industries.....	26,565	26,226	26,450	26,096	27,047	27,872
Durable-goods industries.....	12,519	12,154	12,512	12,177	12,859	13,511
Non-durable-goods industries.....	14,046	14,072	13,938	13,919	14,188	14,361

For More Information Write No. 164
← on Inquiry Card—Page 32

p—preliminary r—revised n.a.—not available



Industry's chemicals:

WHAT'S MAKING NEWS?

The big news in industry today can often be reduced to a chemical formula. Chemistry makes important industrial news in so many ways that top management men find it difficult to keep up with developments. Yet they must keep up because advances in chemistry may have vital meaning for them. These messages are designed to let you know, quickly and easily, what's happening in chemistry.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

ROUTE TO:

"Octopus" Chemical Clears Troubled Waters

A boon to the mining industry since its introduction, Separan® now separates good from bad in chemical processing, waste disposal, the pulp and paper industry and many other fields

When Separan went into commercial production in 1954, Dow research men knew they had an unusual chemical. They were startled, however, by the impressive success of Separan in the mining field. This success was a tribute to the ingenuity of many mining engineers (who discovered *where* to use Separan) as well as to the exhaustive

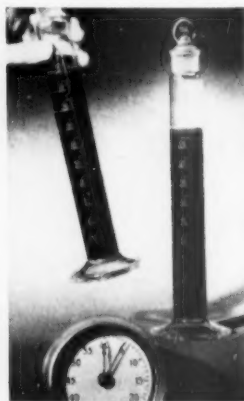
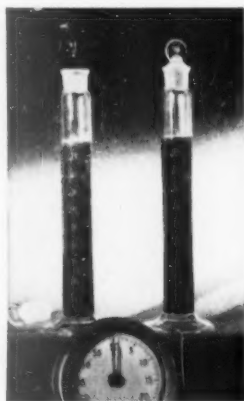
efforts of Dow's technical service team (who knew *how* to use it).

With surprising speed Separan moved into other industries, and, unlike the solids it processes, hasn't settled yet!

What flocculation does. Separan is a flocculating agent, a mouthful word to describe its basic function of gathering

solids that are dispersed in solution into small masses, or flocs, causing them to settle rapidly to the bottom for either recovery or disposal. Stated simply, Separan separates what is wanted from what is not.

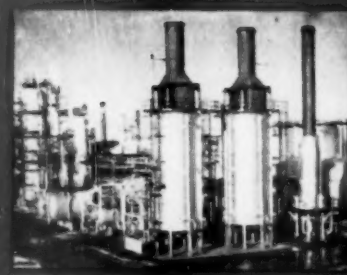
How does Separan work? It has a long, spiral-shaped molecule with octopus-like tentacles that grasp dispersed particles so that increased weight causes them to settle rapidly to the bottom. In a single pound of Separan there are millions of such tentacles, all itching to carry away the sludge in industrial processing fluids—or to gather up the pay load.



Demonstration of remarkable flocculating speed of Separan.

(1) A few drops of Separan added to dirty waste water. (2) Graduate mixed gently. (3) In a moment, solids have settled. Compare with untreated waste water in other graduate.

Other Dow Chemicals



DOWTHERM

Dowtherm®A, the modern heat-transfer medium, was utilized by Canada's Imperial Oil, Ltd., in a process heating system for new lube oil refinery. High temperature stability, lower skin temperatures and ease of operation influenced choice.

Many important industrial uses. Paper manufacturers use it to clarify the lake-size quantities of water they use in processing. Separan also separates solids from liquids in the clarification of coal-washery water and settles mud in the manufacture of alum. Industrial plant men long concerned with stream pollution problems are raving about the way Separan helps clear effluent waters. With Separan, industrial wastes can be economically removed from process water before it's returned to the stream, often saving valuable materials which would otherwise have been lost.

Dow "family of flocculants." At this time, there are two Separan products designated Separan NP10 and Separan NP20. Dow promises there will be more in the near future. Needs of various industries for specialized flocculants are spurring development of a complete line, designed to fit many industrial requirements.

Synthetic Gum:

● New ally for food manufacturers

If mother was really as talented in the kitchen as legend insists, she did it pretty much on her own. Today's young wife has countless allies in the food industry and one of the stand-bys is Methocel®, as contained in prepared foods.

Used as a thickener, emulsifier, stabilizer and moisture retainer, it is colorless, odorless and tasteless. One common use is in canned fruit pie fillings where it provides consistent fluidity,



Filling makes the pie—and Methocel keeps the filling firm and consistent, hot or cold.

hot or cold. Its non-ionic quality means it is not affected by the natural acidity of fruit. Food men find Methocel invaluable in endless convenience items. As a redispersing agent in dehydrated fruits and vegetables, it provides a

rehydrated product that smacks of original goodness. Methocel is good news for the food business—and has applications in an almost endless list of other fields . . . drugs, cosmetics, paint, leather and paper, to name a few.

Chelating Agents:

● Poison antidote of the future?

Exciting possibilities in the medical field are beginning to emerge from research on chelating agents. Heretofore known as industrial chemicals, these ingenious compounds grasp metallic ions suspended in liquid in a claw-like hold, rendering them harmless.

Though still in the investigative stage, possible medical use of these metal-grabbing chemicals provides fascinating food for thought. Chelation, for example, could be used to counter calcium deposits on bones or to rid the body of poisonous lead accumulations. And it may offer virtually the only hope of an antidote for plutonium poisoning.

Effective medical use of the chelates is for the future, but industry is using them *today* in a hundred different ways. Whenever a manufacturing process is affected by impurities in water—and the instances are endless—the chelates come into their own. In making rubber, dyeing textiles, in cleaning scale from boilers and heat exchangers, the chelates do an important job cheaply and effectively. Dow chelating agents are sold as Versene®, Versenol® and Versenex®. They're worth investigating.

★ ★ ★ ★

For further information about these and hundreds of other profit-building chemicals, contact THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 603EEI-5.

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Magnesium

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DOW

NEW AND NEWS WORTHY



DOWANOL



SODA ASH



TRICHLOROETHYLENE

Combining the solvent properties of glycols, alcohols and ketones, Dowanol® products offer the widest range of organic solubility available in any modern solvents. Paint, brake fluid, ink, other interested manufacturers should have new 52-page booklet.

In the processing industries, this versatile product is almost indispensable. Makers of glass, soap, paper, textiles and many different chemicals get quick delivery from Dow's plants in the South and Southwest. Request 44-page booklet on letterhead.

The vitally important missile industry is making widespread use of a new high-purity trichloroethylene developed by Dow especially for use in cleaning missile hardware. Minimum residue on the cleaned parts reduces the danger of misfiring.

← From Head to Head →



WILLIAMS NEW DESIGN SUPERRENCHES®

Fit

Square, precision broached openings end sloppy fits and rounded nuts. Strong but thin heads permit plenty of clearance in tight quarters.

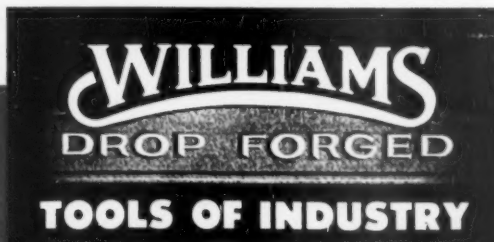
Feel

Drop-forged alloy steel allows trim heads and slim handles designed to give the same "balanced feel" in all sizes . . . all styles.

Finish

Smooth contours and satin finished handles provide a safe and sure grip. Opening sizes legibly stamped. Chrome plated over nickel.

BUY THEM NOW FOR YOUR PLANT . . . ASK FOR CATALOG No. 303



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Washington Report

Overhaul of Military Procurement Policies Slated by Congress

THE MILITARY SERVICES expect a Congressional overhaul of procurement regulations this session.

Late in the last session of Congress, Senator Leverett Saltonstall of Massachusetts, top ranking Republican on the Senate Armed Services Committee, introduced a bill which he claimed would make major reforms in military buying. Basically, what he has in mind are important changes to cut the lead time in new weapon procurement.

A big problem now for the military is the lengthy time it takes to bring a weapon from the concept stage to usable hardware. Under routine conditions, a 10-year lead time is considered normal. It is generally believed that the Soviets have shortened their lead time quite a bit, and the Senator feels his proposed change in the law would shorten ours.

Some of Senator Saltonstall's suggestions, which will be discussed by the new Congress, are:

- Use of performance "specs" instead of the elaborate detailed specifications now required.

- Application of the "weapon system" concept of procurement to all major weapons. This means that one prime contractor would be given the greatest latitude in subcontracting.

- Insistence on incentive or fixed-price contracts wherever possible.

- Exemption of these incentive and fixed-price contracts from renegotiation.

- Requirement that prime contractors give small business the widest opportunity to become suppliers.

- Greater flexibility in buying with open competitive negotiation placed on an equal basis with formal advertising.

Obviously, the Senator has thrown the works into his proposals. Some of the ideas are practical and others were made for political reasons. However, government buying practices will certainly be high on the list of Congressional probes.

For many reasons, some form of procurement legislation looks likely this year. Perhaps the best bet is that a new law on contract renegotiation is due. Military buying practices are sure to come under close scrutiny when renegotiation is being studied.

Uniform Regulations

Uniform federal procurement regulations are also being drawn to apply to both civilian and military buying.

The first section of the new regulations, corresponding to Part 1, Section 1, of the Armed Services Procurement Regulations (ASPR), will be issued shortly.

These regulations are being prepared by a task force whose membership represents the military and the various civilian government departments. The procedure followed by the task force is to study the ASPR and the corresponding regulations of other government agencies—and to use what is thought to be the best of each.

No major changes will come by this approach, but a greater uniformity among departments will result. Thus, where one department has developed something of value, the other government agencies will be able to get the benefit.

(Turn Page)



An extensive revision of the government's procurement policies has been suggested by Senator Leverett Saltonstall (R-Mass.). His proposals are sure to set off a hot debate in this session of Congress.

CLEVELAND *Improved* **MO-MAX[®]** GROUND **T-SHAPED CUT-OFF BLADES**

**can REDUCE YOUR COSTS
on all types of cutting-off,
grooving and finning operations**



MO-MAX High Speed Steel, carefully heat treated by the most modern methods and equipment, provides superior cutting qualities . . . produces more cuts per grind.



MO-MAX COBALT High Speed Steel gives best results under difficult conditions . . . has a high degree of red hardness.

◆ A new method of grinding these T-shaped Cut-off Blades assures extremely high accuracy in all dimensions. Head and body are always equidistant from the center line. This provides complete interchangeability, and saves costly set-up time.

The top of each blade is ground with a radius, so that the chips are crimped. Chips are narrower than the blade itself, resulting in a cooler running tool, less scoring on the sides of the cut and easier application of coolant.

Try MO-MAX or MO-MAX COBALT T-shaped Cut-off Blades on your next job and see how their superior performance reduces your costs. Contact our nearest stockroom or . . .

TELEPHONE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR

for CLEVELAND ◆ Quality Tools . . . prompt delivery from stock



The head and body of every blade are ground to close tolerances with reference to the center line, resulting in accurate uniformity and interchangeability.



THE CLEVELAND TWIST DRILL CO.
1242 East 49th Street • Cleveland 14, Ohio

Stockrooms: New York 7 • Detroit 2 • Chicago 6 • Dallas 2 • San Francisco 5 • Los Angeles 58

Washington Report

● Stable Prices Seen Through June 1959

The price outlook is for continued stability until mid-year. The recovery pattern will be clearer then and wage costs will be known for most basic industries.

In almost every segment of the economy, price props have been built in. At the first sign of a serious sag, support is immediately injected by the government.

The only question is whether stability in the price structure can be maintained afterwards. Any change would be upward, as price cuts are not even remotely indicated.

According to government economists, prices in the last half of 1959 can either: (1) hold steady—with some creep upward or (2) jump sharply.

The only real factor currently holding prices in line is industry's great potential for increasing productivity. The investment in new plant and equipment in 1955 through 1957 will pay off in boosted productivity if long production runs are needed.

The wedges for higher prices already in the economy are wage increases, a high level of government spending, and price supports. All these have to be overcome by productivity gains, if prices are to remain at present levels.

● \$5½ Billion Spent For Gov't Stockpile

Basic stockpile objectives for copper, aluminum, and nickel were virtually completed at the year's end. However, the Office of Defense Mobilization is still required under contract to take industry "puts" of these metals when prices fall below guaranteed prices.

During the current fiscal year, these "puts" will cost \$350 million or more. With the price of copper firming, there have been no recent "puts" of the red metal, but industry sales to the government of nickel and aluminum have continued.

Already the government has bought \$5½ billion worth of materials for the stockpile. With the exception of a few piddling items dollar-wise, the original objectives of the stockpile have been met.

The government, however, is still buying amosite asbestos, small diamond dies, muscovite block and film mica. It plans to spend \$9 million for these in the current fiscal year.

In addition, the ODM is upgrading materials for the stockpile to include oxygen-free copper, ferro molybdenum, ferro vanadium, molybdenic oxide, and tungsten carbide powder. The dollar cost of this program will be \$7 million.

● '59 Capital Spending To Stay At '58 Level

Spending for new plant and equipment remains a big question for the year ahead. From both Government and private forecasts, capital equipment spending is not likely to go up by much, if at all, in 1959.

A joint Department of Commerce and Securities and Exchange Commission study suggests that the rate of spending in the first quarter of the new year, will be slightly higher than in last half of '58.

It's towards the end of the year that forecasters see the possibility of a real upturn. Manufacturing should show strength then, and business leaders could come into the market for more money to be used for modernization and new plant facilities.

This stimulus to the economy would probably come at the same time as an inventory build-up—and most likely for the same reason.

● Steel Price Hike Likely After July 1

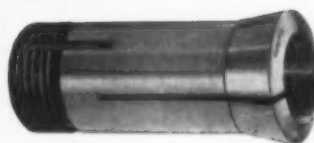
The steel industry expects tough bargaining sessions when labor contracts come up for renewal in June. From all current signs, the steelworkers will come to negotiating sessions demanding a "big"

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SCREW MACHINE COLLETS



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One Source of Supply for all your Collet requirements—means Purchasing Economy

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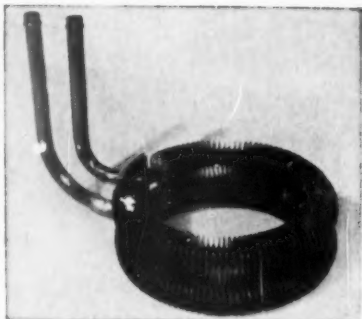
Immediate delivery from conveniently located stocks in: Atlanta, Boston, Chicago, Dayton, Detroit, Elmira, Hartford, Los Angeles, New York, Philadelphia, Seattle, Portland, Minneapolis, Oakland, St. Louis, Toronto, Montreal.

For More Information Write No. 168 on Inquiry Card—Page 32

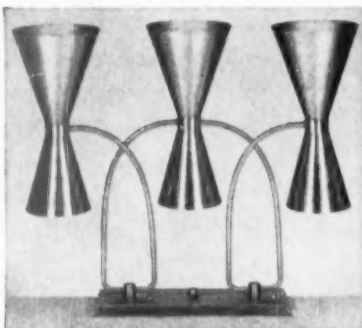
BRIDGEPORT BRASS COPPER ALLOY BULLETIN



Reporting New Developments in Copper-Brass Alloys and Metalworking Methods



Conductivity and fast, low-cost fabrication are important qualities Bridgeport tube supplies for parts like this finned copper tube de-froster coil.



High quality surface finish and easy workability are specified—and supplied by Bridgeport—in tube used in modern lamps like these.



Ease of fabrication, heat conductivity and corrosion resistance make copper tube the ideal choice for parts like this automatic transmission cooling unit.

WHY IT PAYS TO FABRICATE WITH BRIDGEPORT SEAMLESS TUBE

Bridgeport brass and copper seamless tube is an unusually versatile metal form which has a host of qualities, characteristics and uses few other metals can provide. Used in lamps, andirons, automotive parts, cooling units, furniture and other items, it fills a wide range of product and production requirements.

Why Seamless Tube?

Fabricators select Bridgeport Seamless Tube for many reasons. Its beauty and warmth lend much to the appeal of consumer products, for example. And its corrosion resistance and rustproofness make it desirable where other metals fail. Another important plus factor of seamless tube is its easy workability. Machining, bending, forming, cutting and cupping all are easier. Its wonderfully smooth surface finish simplifies polishing and plating. Close OD, ID and wall-thickness tolerances are maintained. This simplifies fabricating, keeps costs down and insures more uniform end products.

Economy...

In addition to the fabrication savings mentioned, additional economies are realized with Bridgeport

Seamless Tube because it is produced in long lengths to insure uninterrupted production runs.

Characteristics...

Still another advantage is the wide range of characteristics available. You can specify combinations of mechanical, physical and fabrication properties as well as tempers to suit every need.

And Quality...

Made in one of the country's most modern tube mills, Bridgeport tubes are checked and inspected at every stage of manufacture to assure adherence to specifications. Bridgeport's other tests cover surface finish, interior strength, accuracy of gage and diameter, chemical analysis, strain, expansion and microstructure.

Find Out More

...about Bridgeport Seamless Tube in a wide range of brass or copper alloys for use in fabricating. Our Technical Service Men can help you solve application problems. Just call your nearest Bridgeport Sales Office, or, if you prefer, write direct to Bridgeport Brass Company, Bridgeport 2, Connecticut, Dept. 3702.

For More Information Write No. 169 on Inquiry Card—Page 32

Washington Report

package—including a 40¢-a-ton welfare fund, patterned after the one won by the mineworkers.

Industry leaders are clearly convinced that any increases in wages this time will have to be fully reflected in price hikes. But they know there is some question as to how much of a rise the market can take.

So far there has been little advance buying. Steelmen expect some hedging in the first quarter. And as talk of steel negotiation difficulties multiply in the months ahead, more P.A.'s will begin to stock up in anticipation of a strike and price increase after July 1.

The amount of the anticipated price increase is still uncertain—but most informed guesses range between \$5 and \$7.50 a ton. Purchasing executives who buy a great deal of steel say that the companies would have to hike prices by at least that amount if labor wins its demands for a hefty wage increase.

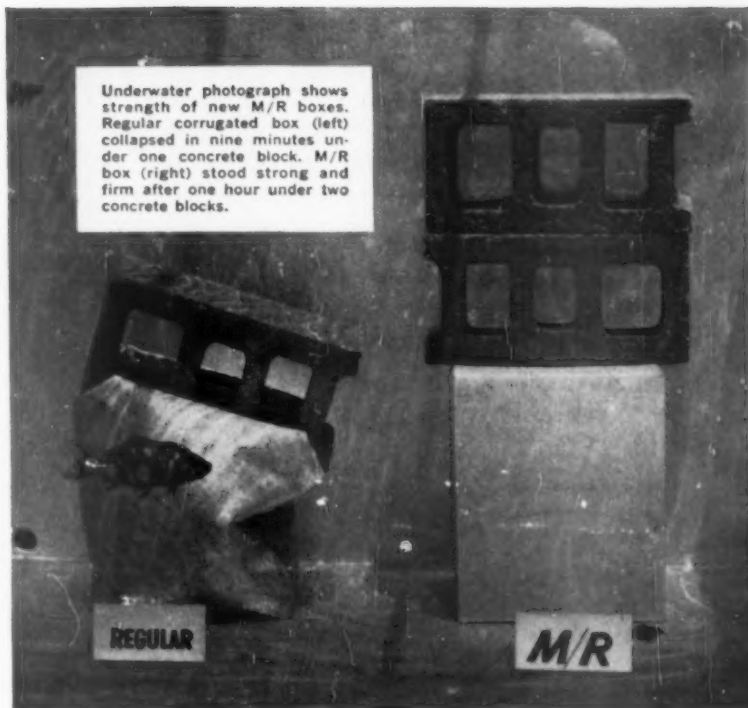
One large company headquartered in the Chicago area has already sent out word to its key executives to expect a strike, followed by a \$6 a ton rise. This company has definitely decided to build up its inventories, so that by July 1 it will have sufficient stocks for a considerable period of time thereafter.

• Bankers Predict New Peaks in 2nd Half

Since banking and credit played such a key role in the recent recession, P.A.'s are paying close attention to opinions currently expressed by bankers. Most of them predict a moderate upturn during the first half of the year, with investment and output reaching to new highs by December.

The bankers see a fairly cautious attitude on the part of businessmen during the first six months. As business continues to improve, they believe that business will tend to increase capital outlays, and to invest in inventory.

—A. N. Weckslar



New M/R Corrugated Boxes

stay strong when wet...even under water!

Important news about Hinde & Dauch's new M/R (moisture resistant) corrugated boxes: Hydrocooler tests show M/R boxes shed water; stay strong and durable for packing and shipping all kinds of wet products. Moreover, M/R boxes stack high and straight. They save packing and handling time, provide remarkable product protection. Initial tests indicate shipping damage to peaches reduced 50%. And the smooth, clean surfaces of new M/R boxes can be colorfully printed with your brand message. H & D Package Engineers are ready to design an M/R corrugated box for your product. Write, wire or phone for complete information today!

HINDE & DAUCH

Division of West Virginia Pulp and Paper Company

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15 FACTORIES • 42 SALES OFFICES

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9813 Decatur Street, Sandusky, Ohio
Please rush me samples and detailed literature on new M/R corrugated board.



Name _____
Company _____
Address _____
City _____ Zone _____ State _____

For More Information Write No. 170 on Inquiry Card—Page 32

YOUR ELECTRIC TRUCK BATTERY

Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 20, Pa.



Up to 44% more power. New Exide-Ironclad Batteries with armored porous tubing pack more power in the same size. So you can boost the work capacity of your present trucks, large or small—do more work. Or get the same power in a smaller size. Either way, you get longer life potential and more power per dollar for greater battery economy.

50 YEARS AGO, EXIDE PATENTED THE TUBULAR PLATE BATTERY

Exide was already 21 years old when it launched the Exide-Ironclad Battery—back in 1909. But the idea of the tubular positive plate was brand new. It was especially designed for electric truck service. Would it really give the longer battery life Exide engineers expected? Would it make possible greater battery economy? Look at the results.

Against every other type of battery—in every type of industrial truck application—in all kinds of heavy duty service, nothing has been found to match the Exide-Ironclad. A recent survey revealed that 91% of truck owners who have used Exide Batteries still use them. Once they experience the advantages Exide Batteries offer, they seldom buy any other brand. No other battery ap-

proaches this record of user satisfaction.

Today, of course, the Exide-Ironclad Battery is 50 years better than it was in the beginning. Exide engineers have constantly improved it. They have learned the secrets about tubular plate construction that only experience could teach—secrets about casting the lead grids, formulating grid alloys, composition of active material, filling the tubes, performance of tubing (about 20 different types were tested over a 15-year period before the last change). So the new Exide-Ironclad Batteries give today's buyer greater life and economy than ever before.

For more details on the new Exide-Ironclad Batteries, write for a copy of the 8-page, illustrated Brochure #6230



Today's advanced-design electric industrial trucks yield their greatest economy and productivity when teamed with the new, more powerful, Exide-Ironclad Batteries.



Now—get your chargers from Exide too

A complete line of chargers for electric truck batteries. New vertical-design motor generator chargers feature down-draft cooling for cleaner operation. Save $\frac{2}{3}$ on floor area mounting space required. Can also be wall mounted. Simplified design and standardized construction make possible significant parts economies which are passed on to you. With Exide as your single source for both

batteries and chargers, you are assured of better value, better performance and better service. *Write for new brochure giving complete information.*

Exide®

CONVENIENCE



By merely picking up your phone and calling your Steel Service Center, you can order for immediate delivery exactly the steel you need.

It's as easy as super-market shopping because your Steel Service Center stocks every type of steel and will process your order to fit your production

schedules. You can save on inventory investment and storage space, too.

Alan Wood supplies major Steel Service Centers with a variety of top-quality steel products. Your nearest Steel Service Center is listed in the Classified Telephone Directory.

ALAN WOOD STEEL COMPANY

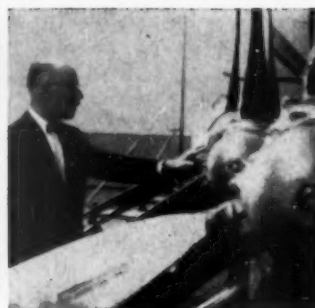
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For More Information Write No. 172 on Inquiry Card—Page 32



Mr. John D. Vars, Purchasing Agent,
Northwest Orient Airlines,
buys Scott Towels because:



"Northwest Orient Airlines finds Scott Towels highly acceptable on all tourist flights because of the whiteness and pleasant feel of the paper. These qualities help build good relations with the public and put Northwest in a favorable light for repeat business from satisfied customers"

Washrooms and restrooms are highly important in your employee and public relations. Send for *free booklet* that shows how to create favorable impressions through principles of modern washroom design. Or ask your Scott distributor for a copy. He's listed in the Yellow Pages under "Paper Towels."



Scott UHA Towels • Scott Multifold Towels • Singlefold Towels • Scott Tissue

Distributed through the leading paper merchants of America

For More Information Write No. 173 on Inquiry Card—Page 32

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**21% to 42%
MORE ELBOW
AT NO EXTRA COST**

It's a built-in bonus that comes right with the elbow . . . a tangent or straight section at each end of the fitting.* Benefits of this bonus . . . this extra value . . . are yours **AT NO EXTRA COST** because Midwest "Long Tangent" Elbows are **PRICED THE SAME AS OTHER ELBOWS**. It's a value you can't afford to miss.

For additional information, ask your Midwest distributor or write us for Catalog 54.

*Size 24" and smaller have tangents equal to 1/4 nominal pipe size; for example, 12" ell has 3" straight ends. Above 24" pipe size, all tangents are 6" long.

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WITH EVERY
MIDWEST
"LONG TANGENT"
ELBOW

ADVANTAGES OF MIDWEST "LONG TANGENT" ELBOWS

- They save pipe.
- They often eliminate short nipples and their extra welds.
- They save time and money in lining up and clamping pipe and fitting.
- They make it easier to apply slip-on flanges.
- They remove the circumferential weld from point of maximum stress and can be sleeved.

THEY COST NO MORE THAN OTHER ELBOWS



**This Ex-Cell-O Bushing should outlast
2 of the kind you are now using . . .**

58-5

POSITIVE PROOF! EX-CELL-O BUSHINGS GIVE TWICE THE AVERAGE BUSHING LIFE

Recent plant-wide bushing life tests, conducted by a large heavy implement manufacturer, established this astonishing proof of Ex-Cell-O superiority: they lasted more than twice as long as the next best bushings on the market.

After drilling 16,300 test holes, the competitive bushing showed an average .0039" of wear—ready for scrap—while Ex-Cell-O bushings averaged only .0017" of wear, less than half as much!

As a cost-conscious competitive manufacturer, you owe it to yourself to investigate the very substantial savings Ex-Cell-O bushings offer. Test them against any, or all, competitive bushings right in your own plant.

Send your order to Ex-Cell-O Corporation at Detroit, New York, Downey, Cal., Lima, Ohio, and London, Canada. You'll get immediate shipment. Write for an Ex-Cell-O Drill Jig Bushing Catalog today.

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DETROIT 32, MICHIGAN

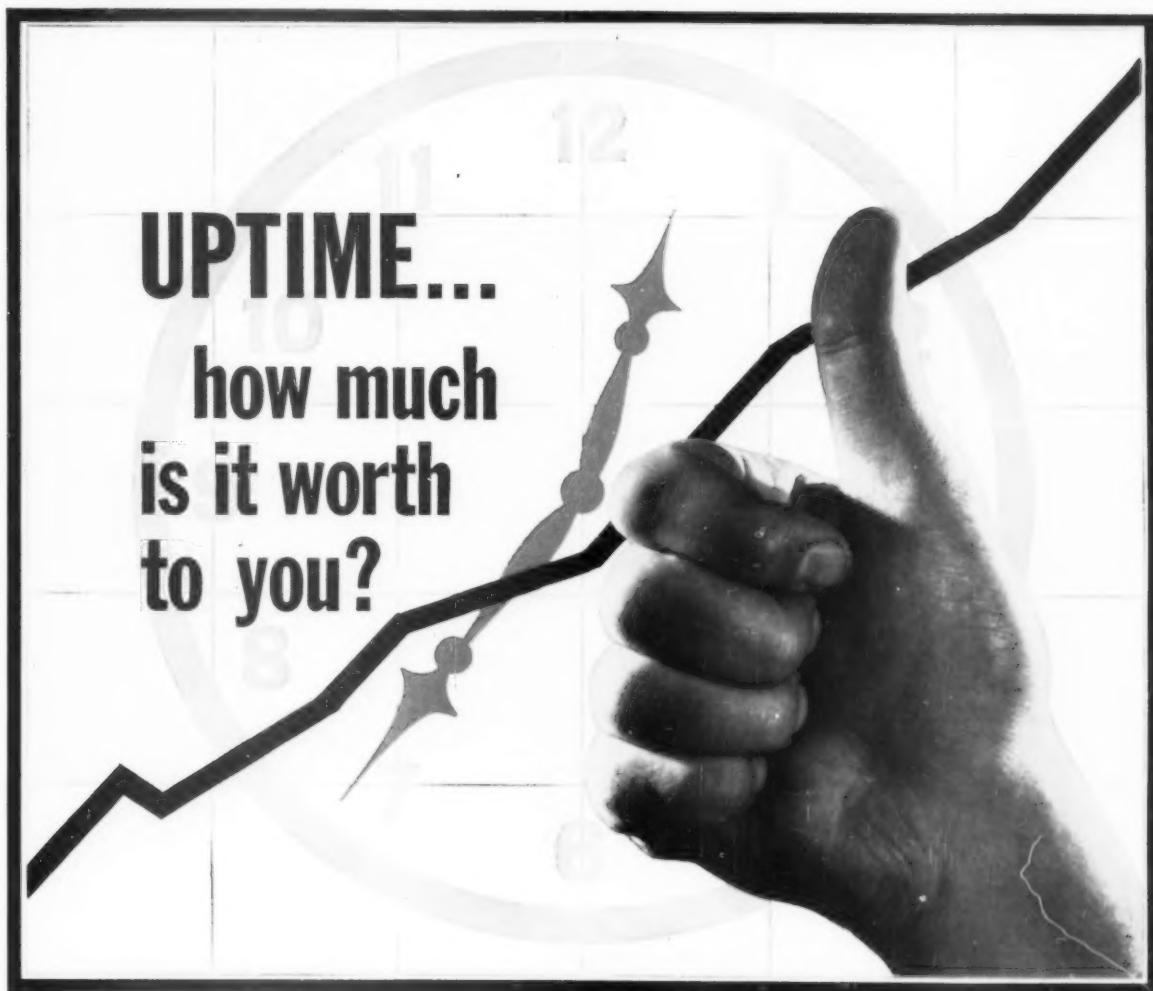
EX-CELL-O
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MANUFACTURERS OF PRECISION MACHINE TOOLS • GRINDING AND BORING SPINDLES
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BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT



PACKING



UPTIME...
how much
is it worth
to you?

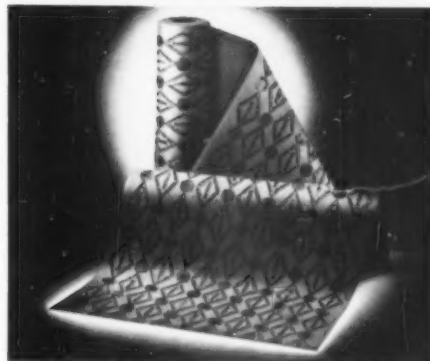
These days, everyone talks about *downtime costs*. Few consider how much *uptime is worth*—the great majority of time when production runs smoothly. How much is uptime worth to you, each hour? \$100—\$200—\$300?

And how much are you willing to spend each hour for a packing that will help keep your pumps and flow lines maintenance free? 1¢—2¢—5¢?

That's the kind of money involved when you use a packing like U. S. Rainbow®—first in red sheet packing. Each extra hour of production uptime means hundreds of dollars in production, yet those same extra hours of packing uptime can be had for just pennies...the difference in cost between a quality packing like U. S. Rainbow and ordinary packings.

Rainbow is designed to pack flanges or other parallel surfaces against hot or cold water, air, saturated steam (up to 150 lbs.) and many other hydraulic conditions—and to pack them for longer hours of *uptime*.

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JANUARY 5, 1959

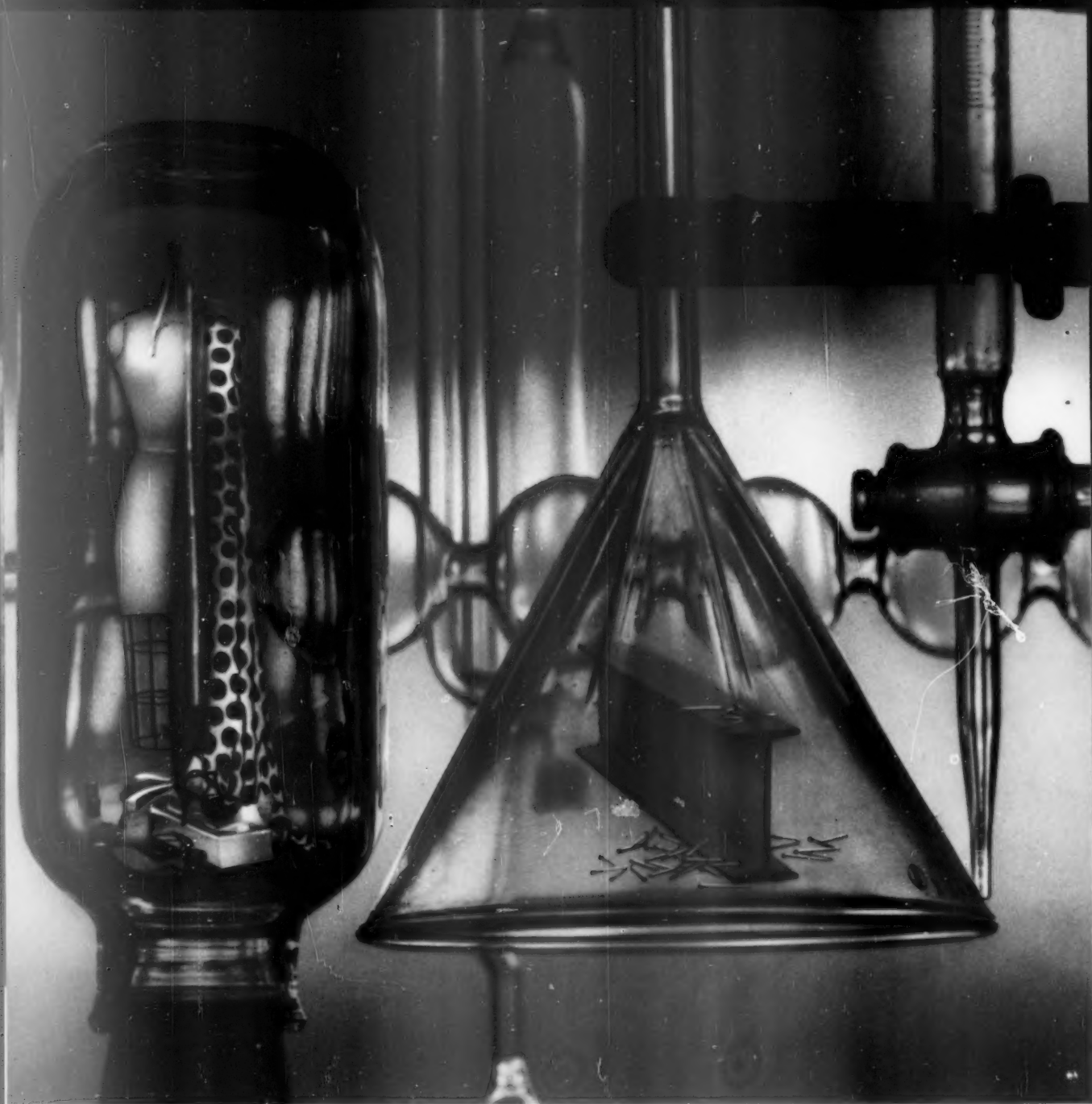
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For More Information Write No. 177

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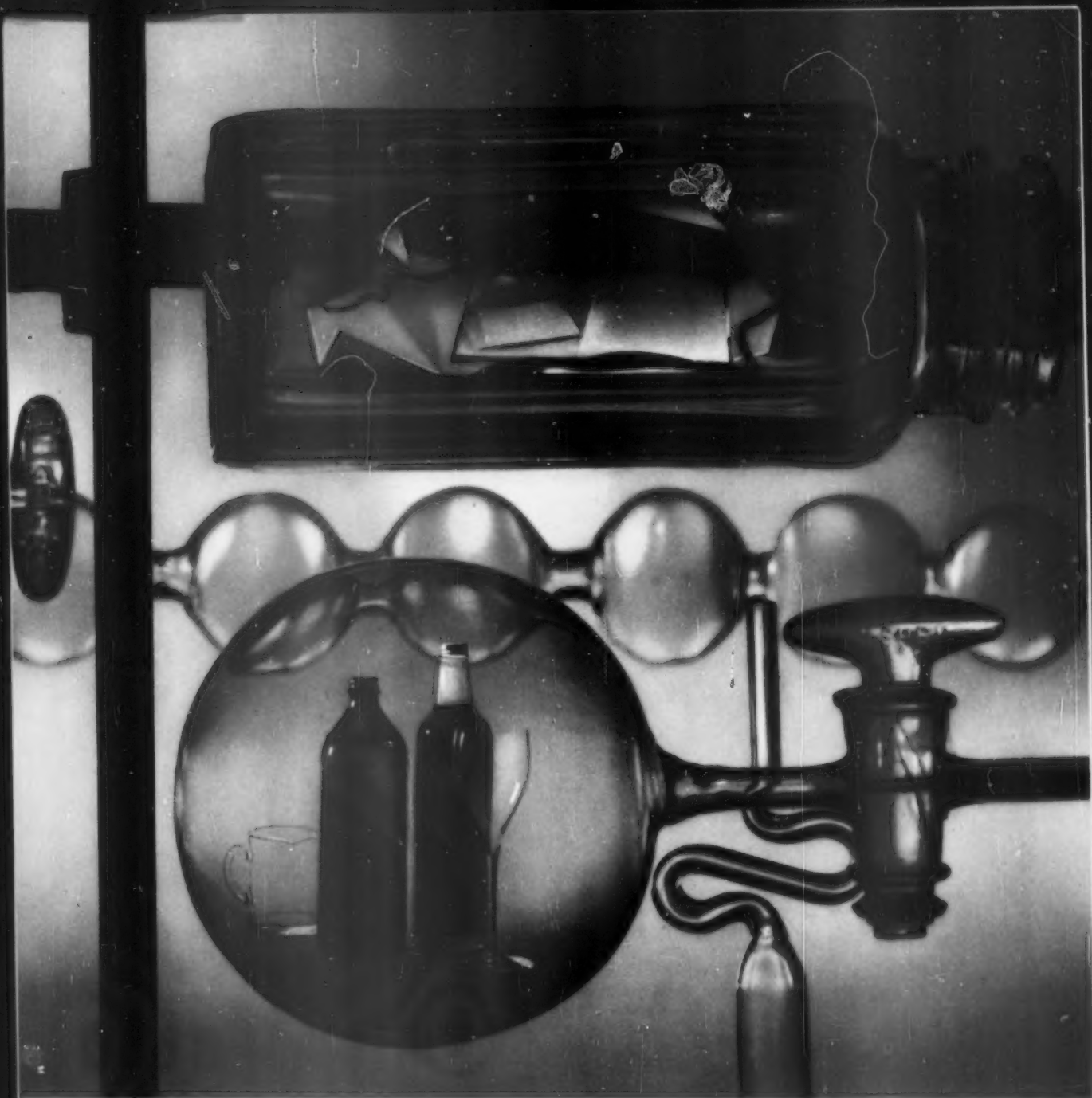
COLUMBIA-SOUTHERN CHEMICALS ANSWER

LOWER COSTS, BETTER PROFITS . . . however you analyze it, dollars saved in processing show up clearly on the balance sheet. That's the big reason you look so closely at the total "package" you get when you buy such essential materials as chemicals.

Product purity? Meeting or exceeding your tightest specifications, shipment after shipment. Dependability of supply? Delivery from plants or terminals meshed exactly to your schedules. Geared to your handling and use? Widest range of forms,

concentrations, land or water shipment. And vitally important . . . ideas and technical help? Instantly available through every district office, or direct from Pittsburgh: experienced, practical specialists with a keen eye to the economics of your specific operation. All this, from whom? Why, of course:

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CHLORINATED SOLVENTS are used in such divergent operations as degreasing metal products and dry cleaning delicate gowns.



SODA ASH is indispensable to the manufacture of glass, soaps and detergents, metals, pigments, other chemicals.



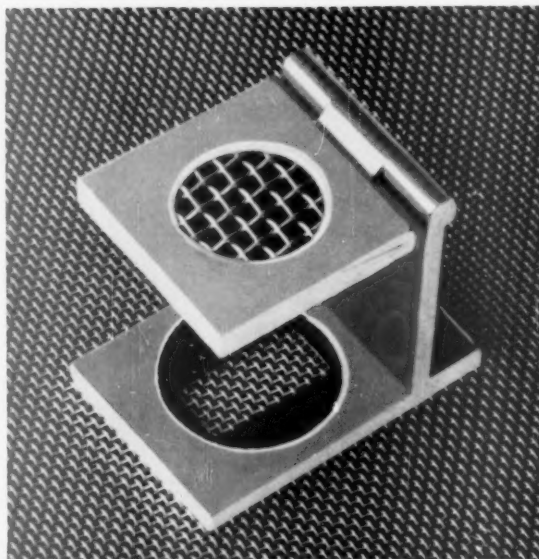
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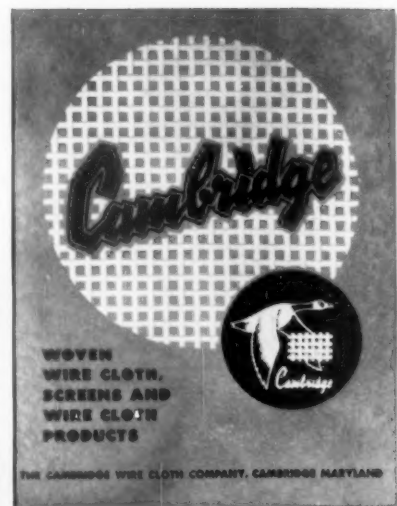
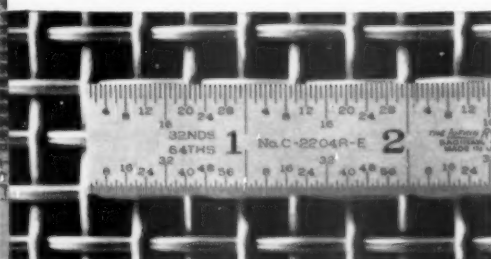
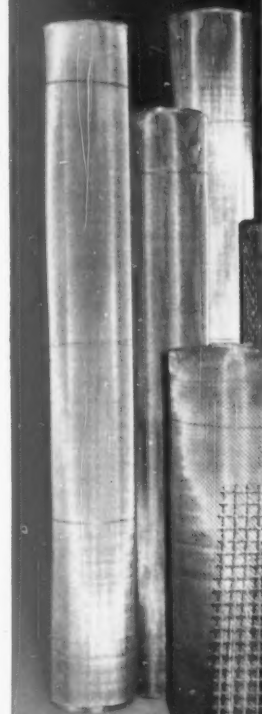
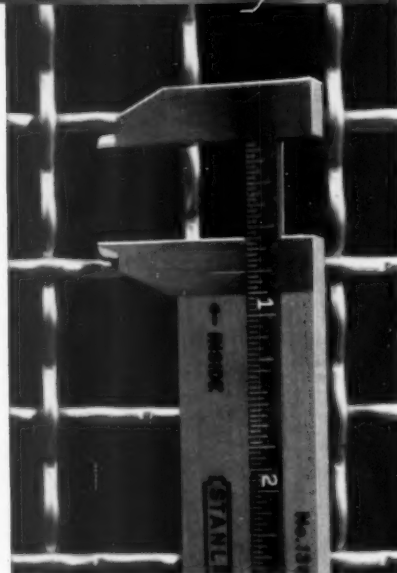
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Vacuum Cleaner Manufacturer Specifies



OSTUCO *Fabricated Welded Tubing*

FOR ECONOMY

Bending vacuum cleaner wand. A variety of fabricating operations also is performed on Ohio Special Quality Seamless Tubing.

“Value analysis showed it would be more economical to buy than produce fabricated welded tubing parts for our new cleaner. What's more, we could avoid additional capital investment in equipment.

“So we added Ohio Seamless to our production line. They have the equipment and facilities to meet our design requirements and to hold to our stepped-

up schedules. And we don't pay shipping costs on scrap — just on finished parts . . .

Let Ohio Seamless translate your designs into finished parts . . . conserve your capital . . . cut your production and shipping costs. Contact your Ohio Seamless representative, listed in the Yellow Pages, or the mill at *Shelby, Ohio — Birthplace of the Seamless Steel Tube Industry in America.*

AA-8847



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of Copperweld Steel Company • SHELBY, OHIO

Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging

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Information For Your Catalog Files

PRECISION GAGES

A 12 page catalog presenting ultra precision instruments and complementary accessories. Photographic illustrations show applications and instrumentation.

Engis Equipment Company

Write No. 1 on Inquiry Card—Page 32

CABLE

Describes plastic insulated and jacketed control cable rated at 600 volts. Lists the specifications of small diameter, station, flexible, and supervisory control cables with two to 19 conductors. Also includes LMSA municipal signal cables.

Chester Cable Corp.

Write No. 2 on Inquiry Card—Page 32

CARBIDES

A 32 page booklet describes a new cutting grade, CA-604—an extremely hard grade containing a unique crater resistant component. Also contains a technical section, featuring six special charts on the proper feeds, speeds, and grades of carbide materials for various cutting operations.

Allegheny Ludlum Steel Corporation

Write No. 3 on Inquiry Card—Page 32

CONTROLS

Bulletin 958 illustrates a full line of industrial controls. Both individual products and assembled controllers are pictured. Also introduces a new line of speed-responsive switches.

Euclid Electric & Mfg. Co.

Write No. 4 on Inquiry Card—Page 32

CONVEYOR BELTS

Describes heavy industrial Koroseal conveyor belts. Available for use in metalworking plants when belting must come in contact with cutting oils and greases. Also for assembly plants where smooth, non-porous, non-marking belts are needed.

B. F. Goodrich

Write No. 5 on Inquiry Card—Page 32

COUPLINGS

Details the Nyflex flexible gear coupling with a nylon sleeve. Provides descriptive data about the lightweight coupling. Includes tabular material covering horsepower and speed ranges, together with bore sizes available.

Sier-Bath Gear & Pump Co., Inc.

Write No. 6 on Inquiry Card—Page 32

FITTINGS

Catalog 556 is devoted to a line of hydraulic tube fittings. Divided into three sections covering self-flaring, no-flare, and flare-type fittings. Includes information on all popular shapes and sizes from 1/8" to 2". Several pages are devoted to specifications on high pressure steel pipe fittings.

Flodar Corporation

Write No. 7 on Inquiry Card—Page 32

FOOT SWITCHES

Describes a heavy duty foot switch for use on machine tools, presses, and motors. Among the features are a high electrical rating, oil-tight cast iron enclosure, and protective toe guard. Has photographs, dimension drawings, characteristics, and electrical ratings.

Micro Switch

Write No. 8 on Inquiry Card—Page 32

HEATING COILS

Contains complete coil selection information as well as detailed descriptive data on the coils themselves. Bulletin No. 890 includes illustrations, construction specifications, dimensional data, surface charts, and circuiting diagrams. Describes standards steam, steam distributing, and hot water coils.

American Air Filter Co., Inc.

Write No. 9 on Inquiry Card—Page 32

MATERIALS HANDLING

Bulletin #509-2 illustrates the use of palletized handling of kegs and multi-sized cartons. Has complete specifications of pallet sizes, stacking heights, and equipment necessary to utilize a system of palletized loads.

Lewis-Shepard Products, Inc.

Write No. 10 on Inquiry Card—Page 32

PORTABLE POWER TOOLS

This 70 page booklet describes a complete line of portable power tools. Also lists accessories and attachments.

Millers Falls Company

Write No. 11 on Inquiry Card—Page 32

ASSEMBLY TOOLS

Catalog No. AT10-58 contains engineering dimensions and specifications for retaining ring pliers, applicators, dispensers, and grooving tools. The 16 page catalog contains a selector guide for recommended assembly tools for each ring type. Also includes descriptions and illustrations of assembly fixtures for internal and external rings, along with information about mechanized assembly.

Waldes Kohinoor, Inc.

Write No. 12 on Inquiry Card—Page 32

For More Information Write No. 180
on Inquiry Card—Page 32→

PURCHASING



**Youngstown
steel bars**

*will help build
farm machinery
in his day*

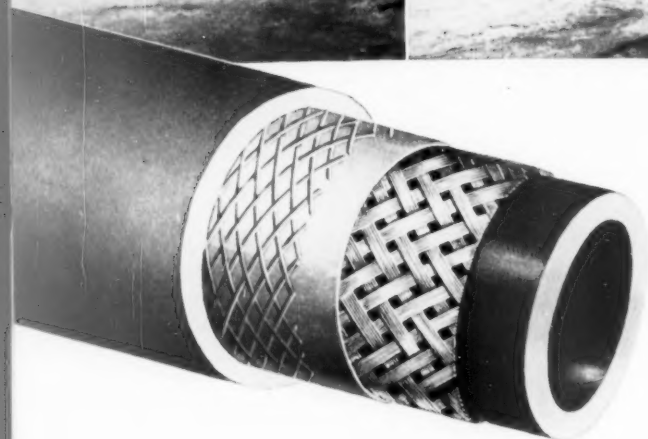
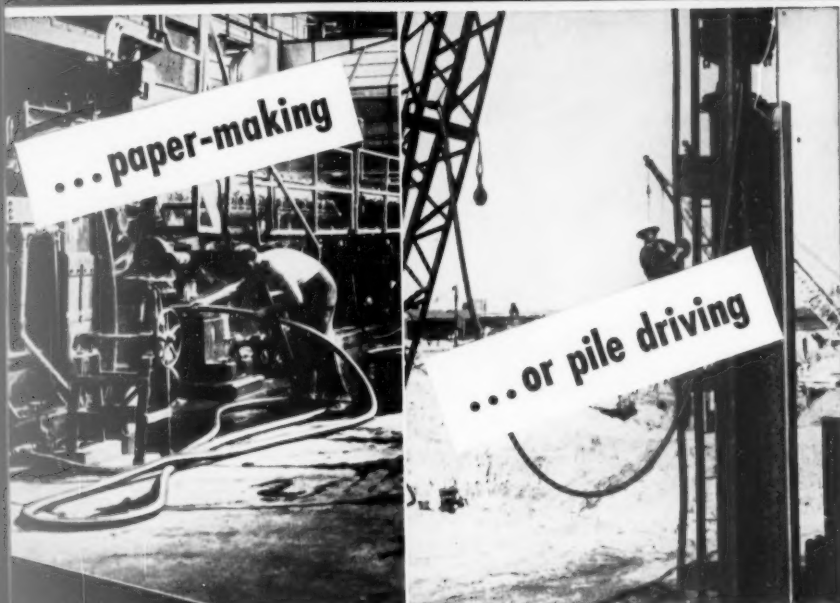
Giant, remotely-controlled agricultural machinery in *his* day will utilize steel bars in quantities unheard of in building the farm equipment of Dad's time. Youngstown, today, is anticipating tomorrow's need for more and better steel bar stock. Constant forward strides in research and steelmaking facilities make certain that when farmers of *his* generation are ready for machinery . . . Youngstown steel bars will help build it. ~



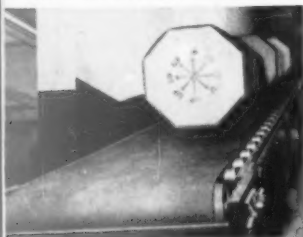
THE
YOUNGSTOWN
SHEET AND TUBE COMPANY

*Manufacturers of Carbon, Alloy and Incoloy Steel
Youngstown, Ohio*

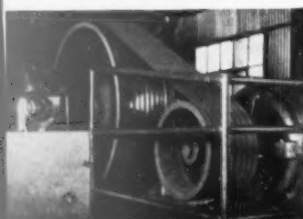
There's a Thermoid Hose for every job



Cut costs with
Thermoid Conveyor Belting . . .



. . . and Thermoid Multi-V Belts



And for your job, too!

You'll find Thermoid has a hose that wears better, lasts longer, stays "on the job" to save you time and money. Each Thermoid Hose is built to do a specific job *best*. The same is true of Thermoid Conveyor Belting, Multi-V Belts and Friction Materials. Call your local Thermoid Distributor today.

If you prefer write direct to: H. K. Porter Company, Inc., Thermoid Division, Philadelphia 35, Pa.

**H. K. PORTER
COMPANY, INC.**

THERMOID DIVISION

Catalog Files

RESIN COATINGS

Describes a number of industrial specialized finishes. Has specifications and technical data on polyamide-epoxy coatings. Lists advantages and uses.

D. J. Peterson Company

Write No. 13 on Inquiry Card—Page 32

TRANSFORMERS

The 24 page bulletin gives a complete reference for selecting small power and control, general-purpose, and special-purpose transformers. Catalog GEA-6723 contains descriptions of each transformer type. Includes typical ratings, prices, and detailed application information on each type of product.

General Electric Company

Write No. 14 on Inquiry Card—Page 32

TURRET DRILLS

Illustrates and describes automatic hydraulic and tape controlled turret drills. The 12 page bulletin gives complete details on operation, including pre-selected speed changes, depth control, and feed rate.

Burg Tool Manufacturing Co., Inc.

Write No. 15 on Inquiry Card—Page 32

VALVES

Bulletin LB-3 describes series LB control valves. The 12 page booklet gives details on construction and operating characteristics. Also points out various design features and optional accessories. Complete specifications and valve sizing data are included.

Conoflow Corporation

Write No. 16 on Inquiry Card—Page 32

VOLTAGE STARTERS

Bulletin 14B8192 describes design and construction features of automatic reduced voltage starters. Covers 50 to 1200 hp starters. Has descriptive copy on the theory and operation of low voltage starters. Also includes starting characteristic calculations, horsepower ratings, and features of the contractors, relays, and fuses.

Allis-Chalmers

Write No. 17 on Inquiry Card—Page 32

For More Information Write No. 181

on Inquiry Card—Page 32

PURCHASING

Been using that
new gummed tape
we ordered, Mac?

*Sure have! And
you know, I
think it's about
the best we ever
used around
here!*

Want me to order
it for you again?

*Yeah, I do. Let's
see, I think it's
called "Safetex"!*



The easiest way to *make* money is by *saving* money.
You can do just that by ordering Safetex for your
Shipping Department. Safetex cuts application costs,
increases shipping room efficiency.

SAFETEX SUPERSTANDARD GUMMED TAPE 

CENTRAL PAPER COMPANY • MENASHA, WISCONSIN

CONTINENTAL

the
number
1
DRILL
for
**QUALITY
CONTROL**

Every day in America's cost-conscious plants, Continental drills are proving their ability to produce a finer, cleaner hole and to last longer — up to 25% more production! Continental drills cost you less per hole!

CONTINENTAL

DRILL CORPORATION

555 W. Adams St., Chicago 6, Illinois

WAREHOUSES:		
NEW YORK 75 Murray St. BA 7-4220	LOS ANGELES 2944 Tweedy Blvd. LO 7-4424	TACOMA, WASH. 2006 Center St. MA 7-3434

FREE 4 PERMANENT TIME-SAVING CHARTS

11

Continental Drill Corp., 555 W. Adams Street
Chicago 6, Ill.

Send us FREE handy form permanent charts
checked below.

<input type="checkbox"/> Conversion Factors	<input type="checkbox"/> Drill Grinding Data
<input type="checkbox"/> Cutting Speeds and Feeds	<input type="checkbox"/> Tap Drill Sizes, Dec Equiv.

Co. Name _____

Address _____

City _____ State _____

Attention _____

For More Information Write No. 183
on Inquiry Card—Page 32

Letters To The Editor

COSTS VS. TOTAL SALES

I note in one of your recent issues that you have no information to offer a reader who is interested in the typical ratio of Purchasing Department Costs vs. Total Sales, Cost of Production and other criteria. Looking back in my files I find a report entitled, "Purchasing Department Operating Ratios." The first two paragraphs will be of interest:

"The October, 1957 *Management News* contains an article by G. H. Haas entitled, 'Purchasing Department Operating Ratios: Excerpt from a Research Study'. The article covers a study of the purchasing department cost of 126 manufacturing companies. An analysis was made of the number of staff members in the purchasing departments as related to total force account, purchasing costs as related to value of purchases and these costs as related to sales volume.

"Generally and as may be expected, purchasing costs are shown to increase with increasing complexity of product and to be lower for large integrated firms producing their own raw materials as against firms purchasing these materials or merely assembling purchased components. Purchasing costs also tended to vary inversely with sales volume."

F. J. Kirkish
Purchasing Agent
Barium Products Ltd.
Modesto, Calif.

• *Management News* is a publication of the American Management Association, 1515 Broadway, New York, New York.

SPEAKERS BUREAU

I want to extend to you the thanks to the Minneapolis Chapter of the NIAA (National Industrial Advertisers Association) for making it possible to have Doug Francisco talk to us at our September meeting.

Mr. Francisco did an outstanding job of presenting the subject of how to advertise to purchasing agents, and all of the comments I

heard immediately after and since the meeting have been highly complimentary to him and to the magazine.

He made a very unusual and effective arrangement by having five local purchasing agents attend the meeting; and they were kept busy fielding questions during the discussion after Doug's talk.

We feel that *PURCHASING Magazine* is very fortunate in having such an accomplished speaker on the staff and we shall certainly recommend him highly whenever we have the opportunity.

George W. Decker
Vice President
Minnesota Chapter, NIAA

FREE—UPON REQUEST

Thank you for making available to us your excellent film "Industrial Purchasing."

It was shown to our production and purchasing personnel and was well received.

C. R. Liddell
Buyer
General Electric Company
Specialty Transformer
Department
Fort Wayne, Indiana

• We are pleased with the fine reception this film receives wherever it is shown. Produced in co-operation with the *Encyclopedia Britannica*, it is available without charge to purchasing or company groups. For information or reservations write Miss Irene Kreidler, *PURCHASING Magazine*, 205 East 42nd Street, New York 17, New York.

WE'LL DO IT EVERY TIME

Congratulations to you, and a tip of my hat to Purchasing Agent Warren L. Price, of Tileston & Hollingsworth Company for "Purchasing is Management" (page 73, November 10 issue).

You have presented this old, old subject in a very interesting manner.

H. D. Beebe
Director of Purchases and Stores
Key System Transit Lines
Emeryville, Calif.

Genuine ALLENS for your king-size holding jobs now available from stock!

1 1/4" and 1 1/2" sizes are standard

These applications show you the great variety of holding jobs for which designers and engineers are specifying these rugged king-size Allen Hex-Socket Cap Screws. They're genuine Allens, from their heads to their Leader Points. Pressur-formed, to preserve the long fibers uncut throughout their lengths. Highly accurate threads. Leader Points, of course—for fast, true starting. 1 1/4" and 1 1/2" diameters available immediately from stock—larger diameters are available on special order.



PHOTO: THE OILGEAR CO.

King-size Allen Hex-Socket Cap Screws are used to secure the flanges in this big 12-inch 3000 psi Oilgear Surge Valve.

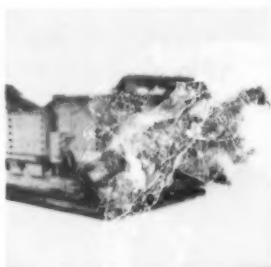


PHOTO: GOODMAN MFG. CO.

King-size Allens secure cutter arms, tilting arms, and elevating cylinders in this massive Goodman Continuous Mining Machine.



PHOTO: SODERHAMN MACHINE MFG. CO.

King-size Allen Cap Screws securely clamp the knives of this large and unusual machine that debarks whole trees.

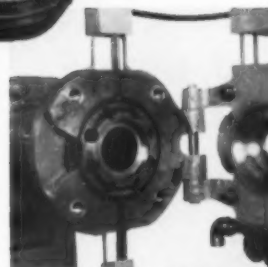


PHOTO: JOHN ROYLE & SONS

King-size Allens in the side-delivery Extruding Head of this Royle machine for application of rubber or plastic in solution.

The cost of Allen Hex-Socket Cap Screws is only a minor fraction of your assembly costs . . . be sure you're getting the timesaving, cost saving advantages of genuine Allens!

 <p>ALLEN GRIP HEAD CAP SCREWS—known throughout industry as fastest, easiest starting, firmest holding. Standard sizes from No. 0 to 1 1/2" diameters.</p>	 <p>ALLEN FLAT HEAD CAP SCREWS—for streamlined, flush-fastening of thin plates, moldings, etc. Standard sizes from No. 4 through 1/4" diameters.</p>
 <p>ALLEN BUTTON HEAD CAP SCREWS—for streamlined, snag-free, unbroken surfaces where countersinking is impractical. Standard sizes from No. 4 through 1/4" diameters.</p>	 <p>ALLEN STAINLESS STEEL CAP SCREWS—for applications where bright finish, or rust and corrosion resistance is essential. Standard sizes from No. 0 to 1/4" diameters.</p>

FREE! . . . this new "vest-pocket" size Allen Hex-Socket Screw **HANDBOOK** . . . 112 pages of up-to-date technical information . . . Send for your free copy today.



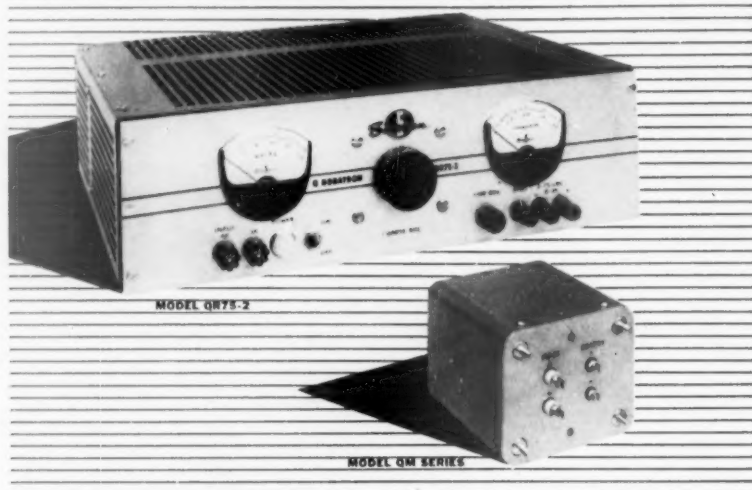
ALLEN MANUFACTURING COMPANY
Hartford 1, Connecticut
Plant: Bloomfield, Conn. • Warehouses: Chicago, Los Angeles

Stocked and sold by leading industrial distributors everywhere



NEW IDEAS IN PACKAGED POWER

for lab, production test,
test maintenance, or as a
component or subsystem
in your own products



3 new Sorensen transistorized d-c supplies can solve your lab, production and design problems

In the Sorensen "Q" Series, you can select from the most complete line of fully transistorized, highly regulated low-voltage d-c supplies on the market: **QR-Nobatrons**, (shown above, left) with output continuously adjustable down to zero volts, are ideal for labs or wherever maximum flexibility is required. Two models, QR36-4A and QR75-2, put out respectively 0-36V at up to 4 amps and 0-75V at 2 amps. Regulation of QR36-4A is $\pm 0.025\%$ or 4 MV for combined line and load variations. Input: 115vac 50-400 cps available for either bench or rack-panel ($5\frac{1}{2}'' \times 19''$) use.

Q-Nobatrons®, with 2:1 adjustable output, can render outstanding service in semi-permanent lab set-ups, in production test, or integrated into your own product. Available in 15 models up to

200 watts capacity with 6, 12 or 28 volts out. Specs and packaging are similar to QR models above. Models for $\pm 0.25\%$ or $\pm 0.05\%$ regulation are available. Lower wattages are available two to a single rack panel ($3\frac{1}{2}''$ or $5\frac{1}{4}'' \times 19''$).

QM-Series, solder-into-the-circuit supplies (shown above, right) mount like a potted transformer or choke and come in 36 variations: nine voltages from 3.0 to 36vdc, regulated $\pm 0.05\%$; and four wattages, 2, 4, 8 and 15. Input 50/60 and 400 cps at 115vac. (Incidentally, Sorensen also offers similarly packaged DC-to-DC and DC-to-AC converters.)

Ask us, or your nearest Sorensen representative, for the complete story on these precision transistorized regulated d-c supplies.

B-42



SORENSEN & COMPANY, INC.

Richards Avenue, South Norwalk, Connecticut

WIDEST LINE OF CONTROLLED-POWER
EQUIPMENT FOR RESEARCH AND INDUSTRY

IN EUROPE, contact Sorensen Ardag, Zurich, Switzerland. IN WESTERN CANADA, ARVA.
IN EASTERN CANADA, Bayly Engineering, Ltd. IN MEXICO, Electro Labs, S. A., Mexico City.

For More Information Write No. 185 on Inquiry Card—Page 32

Letters

BACK DOOR VISITS

We would appreciate it if you would send us any articles you have pertaining to visits by salesmen directly to the mill. Sometimes the visitors by-pass the purchasing department entirely, while others, with permission from the purchasing department, visit so frequently as to be annoying to the operating people.

W. J. Langfitt

Jones & Laughlin Steel Corp.
Pittsburgh 30, Pa.

• Many companies have established very effective controls regarding the "back door" approach. A composite of these efforts would be: (1) Get top management to initiate a policy statement saying that all salesmen should first go through the purchasing department every time they call; (2) some control should be set up whereby purchasing gets a copy of the reception room registration booklet so that purchasing people know exactly where all visitors are; (3) Approval and cooperation would have to be obtained from requisitioners so that they will refer salesmen back to the purchasing department when calls are made directly upon them. This can sometimes be controlled by simply instructing receptionists not to permit anyone through without a pass. If these controls are instituted with everyone's cooperation and understanding, there shouldn't be any problem in getting them to work.

POINTED NEEDLES

I thoroughly enjoyed your article, "A New Approach to Purchasing Paperwork," which appeared in a recent issue of *PURCHASING Magazine* (October 13).

Mr. Barcan has given us some thought-provoking ideas. Receiving the needle concerning the volume of paperwork really hits home with most of us.

J. E. Doyle

Director of Purchasing
Eastman Kodak Company
Rochester 4, New York

For More Information Write No. 186
on Inquiry Card—Page 32→

PURCHASING



One Pallet of Quality -Coming Up!



Whatever packaging you choose for the Roebling Magnet Wire you buy, you are certain the wire is of *unsurpassed quality!*

Modern manufacturing methods...quality ingredients...wire-making skill based on decades of experience...exact testing and inspection—all these factors combine to assure this one high standard. Yet *quality* Roebling Magnet Wire costs no more than others!

Roebling Magnet Wire comes in types



and sizes exactly suited to your applications...and packaged to give you utmost flexibility, efficiency, economy. Write Electrical Wire Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey, for all the facts.

ROEBLING

Branch Offices in Principal Cities
Subsidiary of The Colorado Fuel and Iron Corporation



Experience—the extra alloy in Allegheny Stainless



key words in solving production puzzles:

Allegheny for Stainless; Ryerson for Service

If one of your toughest production puzzles is getting top quality stainless steel *when* you need it, check in now with the Allegheny-Ryerson combination.

Allegheny Ludlum is the leading producer of stainless steels in all forms. And Ryerson, long recognized as the largest and best steel service center, carries Allegheny Stainless. This unbeatable team brings you the best quality stainless quick, when you need it.

Ryerson now stocks 2,351 shapes, sizes, finishes and alloys of Allegheny Stainless . . . the most complete line

of stainless anywhere! And Ryerson relieves you of the inventory cost, gives you as quick service as your own stockroom.

Whether your order is for Allegheny Stainless sheet, plates, bars or whatever, Ryerson stocks it. Trained salesmen and technicians to help in selecting or in fabricating are at your service.

Call Ryerson, for top quality Allegheny Stainless from warehouse stocks. *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.*

WSW 7124

ALLEGHENY LUDLUM

for warehouse delivery of Allegheny Stainless, call RYERSON

Export distribution: AIRCO INTERNATIONAL

EVERY FORM OF STAINLESS . . . EVERY HELP IN USING IT



For More Information Write No. 187 on Inquiry Card—Page 32

Purchasing People In The News

Clyde E. Rosene has been appointed purchasing agent of the Industrial Division of Surface Combustion Corporation, Toledo,



C. E. Rosene

Ohio. Mr. Rosene succeeds **Morris Goodman** who retired. Mr. Rosene joined the company twenty five years ago and was assistant purchasing agent since 1943. He is a member of the National Association of Purchasing Agents.

Appointment of **Harlan E. Eastman** to the newly created post of purchasing administrator for Beckman Instruments, Inc., Los Angeles, Calif., has been announced. Mr. Eastman will be head of the purchasing activities of the company's six operating divisions and a subsidiary. He joined the Beckman organization in 1957 as purchasing agent for the Helipot Division. Before that he was manager of purchasing for the Clary Corporation for thirteen years. Mr. Eastman is a director of the Los Angeles Purchasing Agents Association. He is also district chairman of Value Analysis-Standardization for the National Association of Purchasing Agents.

Rheem Manufacturing Company, New York, N. Y., has announced the appointment of **George J. Papas** as vice presi-

dent-purchasing. Mr. Papas had been director of purchasing since 1946. He joined Rheem at Chicago in 1941 and served as plant purchasing agent at Danville, Pa., and Sparrows Point, Md., before his appointment as director of purchasing. Mr. Papas is a member of the American Iron and Steel Institute, the American Management Association and the steel committee of the National Association of Purchasing Agents.

E. F. Andrews has been appointed assistant to **L. H. Bittner**, vice president in charge of purchases, Allegheny Ludlum Steel Corporation, Pittsburgh, Pa. Mr. Andrews comes to Allegheny Ludlum from Pitman-Moore Company, Indianapolis, Ind., where he has been director of operations for the past two years. Prior to that appointment, he was for ten years director of purchases of Pitman-Moore. Mr. Andrews is a past president of the National Association of Purchasing Agents. He is currently chairman of N.A.P.A.'s national executive advisory committee.

Capital Airlines Washington, D. C. has announced the appointment of **Richard H. Schwank** as director of procurement and supply. He succeeds **George Porter**, who has resigned. Mr. Schwank has been assistant director of procurement and supply since 1956. He has had over twenty years' experience in the aviation sales and purchasing fields. First employed in American Airlines procurement division, he joined Chicago and Southern Airlines in 1941. There he was appointed purchasing director. When C&S merged with Delta Airlines, he became assistant director of procurement. From April 1954 until joining Capital in 1956, he was supervisor of commercial spare parts sales for both the foreign and domestic operations of Air-Research Manufacturing Co., Los Angeles.

Westinghouse Air Brake Company, Pittsburgh, Pa., has changed its purchasing organization serving the Pittsburgh divisions.

Purchasing departments have been established at two divisional headquarters in the Pittsburgh area. These departments will replace a central purchasing unit which has been serving all local operating units.

R. E. Moritz has been named manager of purchases for the Air Brake and Industrial Products Divisions with headquarters in Wilmerding, Pa. **H. I. McKeever** will be manager of purchases for the Union Switch & Signal Division at Swissvale, Pa. **R. M. Hornbeck**, vice-president of purchases and traffic, will supervise and coordinate all purchasing activities. In addition, he will be responsible for traffic and transportation at all divisions and subsidiaries.

American Planter Co., Burr Oak, Mich., announced the appointment of **William J. van Almen** as purchasing agent. This



W. J. van Almen

duty is an addition to Mr. van Almen's previous duties as production manager and cost accountant. Mr. van Almen has been previously employed by the Bendix Aviation Corp., Kansas City division as production coordinator; the L. A. Darling Co., Metal division as a cost account and methods analyst; and the Wade Electric Products Co., as methods analyst and cost estimator.

A message of interest to users of Solenoids

DETROIT COIL COMPANY
Manufacturers of Drive-Inducted Solenoids

Bussmann Mfg. Division
McGraw-Edison Company
St. Louis 7, Mo.

Sept. 29, 1958

Gentlemen:

In the development of any product, accelerated endurance tests are of the utmost importance. Since our test facilities run unattended for a considerable period of time, it was always an unknown factor when a breakdown occurred; and whether the breakdown was the result of an electrical or a mechanical cause. Since our introduction of Fusetron fuses to this test equipment, we have eliminated this unknown.

For this test work, we need a protective device permitting normal operation of the solenoid, but in the event of mechanical or electrical breakdown, stop the test at a stage where the cause for failure could be examined before the evidence was destroyed.

Approximately two years ago, we started using Fusetron fuses on these tests. We found them to have an amazing consistency in their rating. Since then, where the proper size Fusetron fuses were used, it has been possible for us to determine the direct cause of electrical breakdowns.

We believe that if Fusetron fuses of proper size were generally used in the field, a great deal of coil replacement could be avoided — and resultant costly shutdowns, required while a solenoid is being repaired or replaced, would be eliminated.

This would be a boon to our service department, too, as it would cut down the number of service calls we have to make where the problem is not directly due to failure of the solenoid.

We feel that general use of the Fusetron fuse protection for solenoids would help both our customers and ourselves.

The size Fusetron fuse we use on normal applications is generally about 125% of the holding current rating of the solenoid.

Yours very truly,

DETROIT COIL COMPANY

E. A. Viale

E. A. Viale
Vice President

EAV:g

This amazing consistency is due to BUSS Engineering.

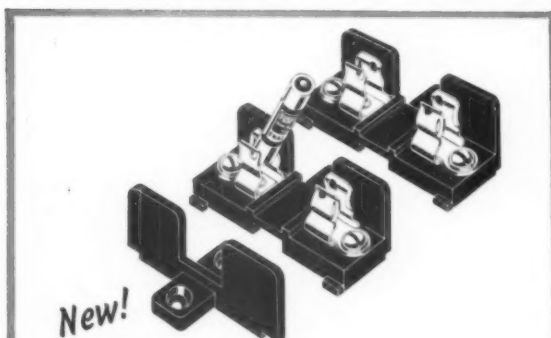


"A Great Deal of Coil Replacement could be avoided, and Resultant Costly Shutdowns Eliminated by Protecting Solenoids with FUSETRON FUSES."

E. A. Viale, VICE PRESIDENT
DETROIT COIL COMPANY



Protecting solenoids or other electrical equipment with FUSETRON Fuses—gives you greater safety, dependability and money-savings!



The BUSS Add-On Fuse Block for the protection of solenoids or Small Motors on Multi-Circuit Equipment

The BUSS Add-On fuse block makes it easy to protect equipment of any kind where a number of solenoids or motors are used.

Blocks are made up of single pole fuse blocks that interlock into a unit fuse block of any number of poles.

Poles may be added or removed . . . to either end of assembled fuse block. This makes it simple to have a fuse block of just the number of poles needed and to fit the block to available space.

Each fuse can be used as a circuit disconnect.
Specially designed fuse clips per-

mit one end of fuse to be removed from clip and fuse raised to right angle to block where it is held firmly in position — see picture above.

When working on machine this makes it quick to identify circuit that is open — and it assures that proper fuse will be put back in right circuit.

Write for BUSS Bulletin BL-1.

BUSS and FUSETRON fuses are available to fit these fuse blocks in ampere sizes up to 30 and for voltages up to 250. Write for BUSS Bulletin SFB.

FUSETRON dual-element fuses provide 10 point protection against electrical troubles—unlike circuit breakers or ordinary fuses which, except in rare cases, protect only against short-circuits.

Fusetron Fuses remain safe — with no maintenance or recalibration required. They are calibrated at the factory by engineers. Once properly installed, they require no inspection and resulting downtime necessary on mechanically operated devices. There are no hinges, pivots or contacts to stick or get out of order. Dust, corrosion or oxidation cannot increase a Fusetron fuse's capacity or lengthen its blowing time.

After years of inactivity, a Fusetron fuse will give the same safe, dependable protection if called upon to open as it would have on the day it was installed.

For more information, write for . . . Bulletin FIS on Fusetron Fuses.

Bussmann Mfg. Division, McGraw-Edison Co., St. Louis 7, Mo.

159

**Play Safe! Install Fusetron dual-element fuses throughout
entire Electrical System.**





FORMULA FOR REDUCED ASSEMBLY COSTS

Here's a sure fire way to get design and production engineers to listen attentively when you talk purchasing costs: tell them there's more to buying tubular rivets than just price and delivery. Tell them tubular rivets and automatic riveters ought to be paired for maximum cost savings!

For the answers to assembly problems get in touch with Milford first!

THE  **MILFORD RIVET & MACHINE CO.**

MILFORD, CONNECTICUT • HATBORO, PENNA.
ELYRIA, OHIO • AURORA, ILL. • NORWALK, CALIF.

For More Information Write No. 189
on Inquiry Card—Page 32

FOB—"filosofy of buying"

WHAT A CHRISTMAS it was! Personally, we all had a ball. Glasses, ornaments, and children's laughter tinkled throughout the house. Joy wasn't confined one bit. But professionally it was murder.

First, a local association official publicly questioned the taste, authorship and, by implication, aim of one of the articles on gift-giving in our September 1 issue. Actually, in publishing the article (which was written by an industrial sales manager) we thought we were aiming at the same goal as the official: to abolish Christmas giving by suppliers.

Then we got it from the other side. Senior Editor Stu Heinritz in a talk before the Milwaukee Association said he "didn't think there should be any degree of compromise" about accepting Christmas gifts, and that purchasing agents have a responsibility to try to halt the practice of gift-giving.

A quick-witted reporter got a fire going by tying Stu's statement to one issued by Charles Ward, president of Brown & Bigelow, "the largest company in the business remembrance field."

"What a man does in his business," fumed Mr. Ward, "is actually his own business, so long as he doesn't hurt anyone else. But when he advertises what he is going to do, when he tells a thousand of his suppliers that his people may not accept Christmas gifts, then he is using the boycott."

"He is boycotting the smoked turkey processors, the ham people, the Maine lobsterman, the New Orleans praline manufacturer, the manufacturer of billfolds and pens and playing cards and cheese; the fruit grower and the magazine publisher and the distiller."

"And suppose he does cut out gifts to his customers. Is he going to cut off his employees too? Is he going to save a few dollars by ceasing to make overt gestures of friendship toward them—and thus open the doors to further union inroads on his profits?"

We certainly want to see praline producers, lobstermen and ham people prosper. Above all, we want to see magazine publishers prosper. But we still believe in competition, and we don't think praline producers, turkey processors, ham people—or publishers—have any right to cry "boycott" simply because a company's policy may indirectly affect them. If that idea is accepted we'll have the peanut butter manufacturers bellowing "foul" at a rule that sandwiches can't be brought into the offices; the cigar-makers association bellowing "unfair practice" about a no-smoking regulation in a gunpowder factory, etc., etc.

But this thing isn't over yet. Just wait until the greeting card manufacturers see this letter sent out to suppliers last month over the signature of G. T. Smith, vice-president, purchasing, New York Shipbuilding Corporation:

"During the past few holiday seasons, we have closely examined the practices of our suppliers in sending Christmas cards to our personnel. In most cases it seems to have evolved into a matter of onerous duty. During the 1957 Christmas season, we put aside—in a two-day period—seven different cards addressed to our buyer P. Crehan, all with differently spelled names and different initials (Crean, Crehand, Crean, Krehan, etc.). Under these circumstances, one can only assume that the spirit that originated this practice is lacking."

"Because of this, we would appreciate it very much if you would strike from your firm's Christmas card list the names of our purchasing department personnel. We are sure you will understand the spirit of this request."

Take cover, Smith!

WE DIDN'T know quite how to classify the following item from "The New York Times," yet we felt it would interest purchasing

agents. Read it and decide for yourself whether it should be headed News of Your Suppliers, Labor Trends, New Ideas in Industry, or What's Wrong With Our Educational System?

"In Loyang Honan (Red China) 4,000 students ranging from 7 to 18 years have set up an extra-curricular iron and steel plant that is producing 40 tons of steel a day.

"While pursuing their studies, the youngsters aged 7 to 9 work two hours a day picking up scrap iron and old nails, digging ore and gathering firewood. For longer periods, the 14 and 15 year olds tend machinery, make molds and blow oxygen. Still older students move the ladles of molten metal, smelt the ore and build brick linings for furnaces.

"No student is permitted to spend more than six hours a day at his steel work. There was some opposition from teachers and parents before the system was established."

Look, ma, no hands, cried the boy puddler. But when he looked up, ma, that old reactionary, wasn't there any more.

THE BACKWARD LOOK is catching on in office equipment purchasing. Two Wall Street firms recently bought a number of custom-built roll-top desks for their offices. The explanation in one case: the smoothly finished desks blend well with the austere mahogany walls of the offices; the little cubicles at the top of the desk are handy nooks to store memos, cigars and other items; and finally, roll-tops have been in the office since the days when roll-tops were in fashion—so why bother changing to these new-fangled square jobs that might go out of style any day.

Old-fashioned sentiment is a nice thing. But let's hope this trend doesn't catch on or purchasing offices will begin to look like something out of Dickens with quill pens, dunce chairs, musty ledger books, etc.

JANUARY 5, 1959

WIRE FILTER CLOTH

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**CALL ON NEWARK
When Purchasing**

**PARTS FABRICATED
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TESTING SIEVES

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Make NEWARK your source of supply for Wire Cloth and Wire Cloth Products. We weave all of our own cloth from which we fabricate parts for our customers...thus insuring both quality of cloth and accuracy of construction.

Newark Wire Cloth is available in all standard widths, all meshes, all commercial metals...the Newark line is a complete line even up to 400 mesh cloth. And if your problem is one of parts design, our engineers will be glad to aid. May we quote on your requirements?

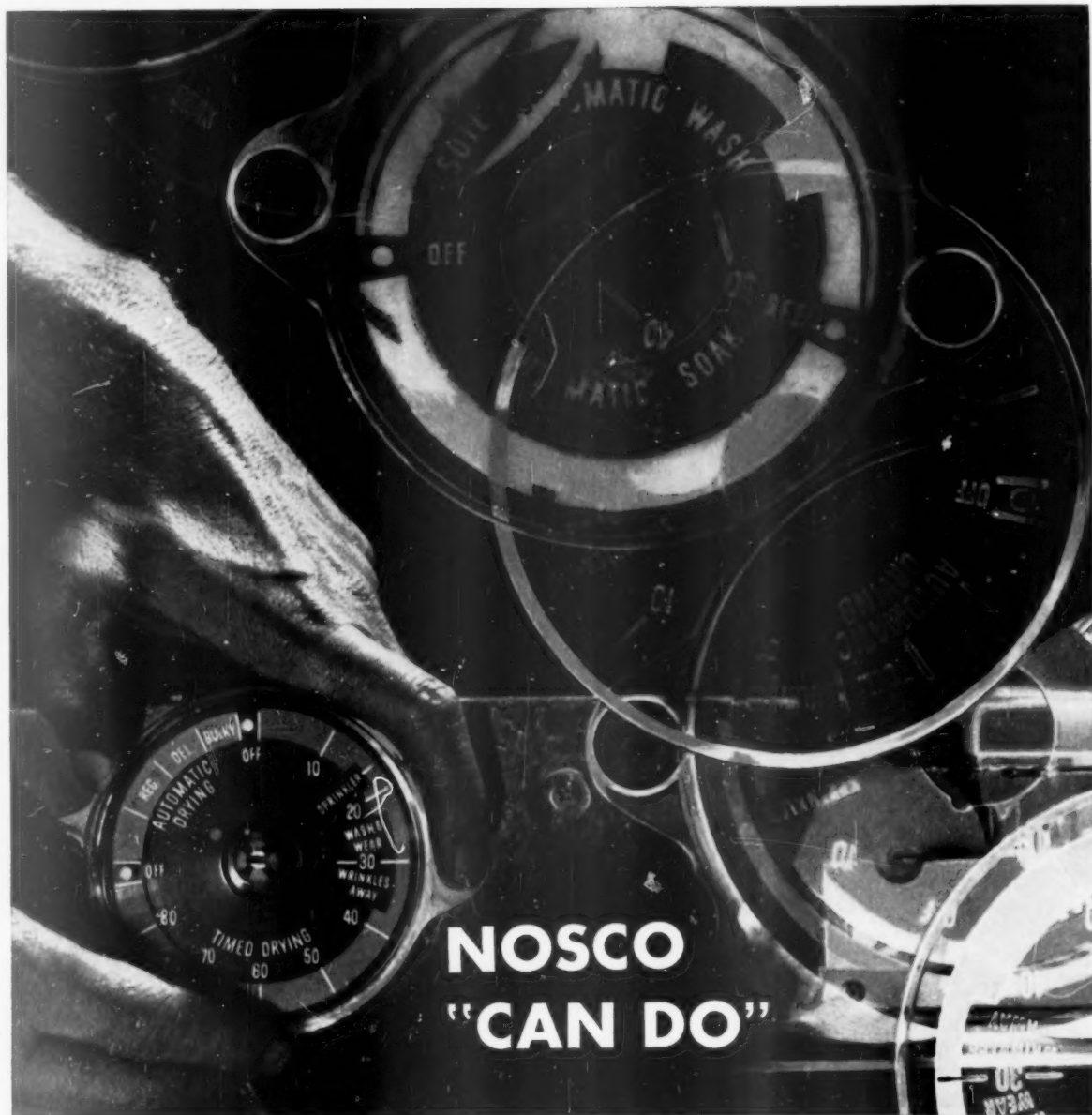
**NEWARK
for ACCURACY**

**Newark Wire Cloth
COMPANY**

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NEWARK 4, NEW JERSEY

For More Information Write No. 190 on Inquiry Card—Page 32



Redesigns decorated plastic dial... steps up production rate 30%

Those hands belong to a busy appliance manufacturer. That dial he's attaching to the backsplash may be small, but it once presented a man-sized production problem! That's when he came to Nosco and said "These specs on our new decorated acrylic dials are tough. They involve a complex, cup-shaped section with remote lettering. But we still want costs kept low. Can do?"

Nosco said "Can do—better and cheaper. Let us redesign each complex dial into two pieces that are easy to mold and easy to assemble. We'll hot stamp two colors at a time. And then, with this new design

we can spray paint and wipe automatically. This way, costs are cut, production increased, and quality kept high."

The result: 2500 completed washer or dryer dials per shift—30% more production at no increase in cost! That's what Nosco "Can do" did recently for one happy manufacturer.

And Nosco "Can do" for you, too. We like tough injection molding and decorating projects. Let us show you how we can produce your plastic parts in volume, and perhaps cut costs by redesign. For more information call or write.

NOSCO plastics, inc. • erie 1, pa. *One of the world's great injection molders*

NP-09-01

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*You don't have to
see the "Red End" to
know it's a*

SIMONDS

HACKSAW BLADE

*Just put it to work
... that's all!*

Performance speaks for itself. And if you think there's no difference in hacksaw blades, try this:

**TEST 1 BOX OF 10 SIMONDS "RED END" BLADES
AGAINST ANY 10 OTHERS**

Then you'll know you're getting more for your hacksaw dollar than you ever got before. And then you'll see why so many other hacksaw users "Say Simonds and Save!"

Simonds "Red End" Power Blades come in All-Hard and Shatterproof types in all standard lengths, thicknesses and tooth spacings . . . a "right" blade for every job! Three types of Hand Blades are also furnished in all standard specifications for best results at lowest cost.



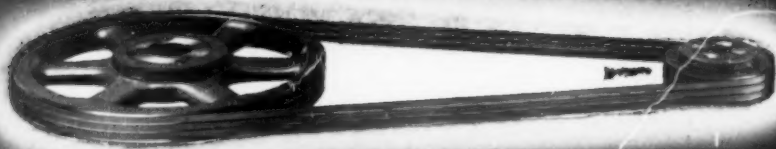
Factory Branches in Boston, Chicago, Shreveport, La., San Francisco
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Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill,
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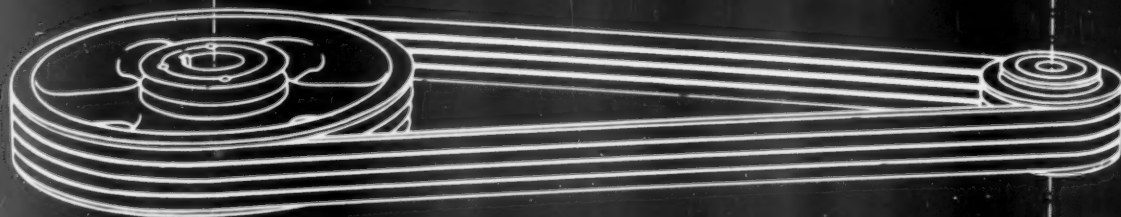
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New high capacity V-belt revolutionizes drive design



NEW, COMPACT GATES SUPER HC DRIVE



PRESENT V-BELT DRIVE

Makes drives far more compact... cuts cost as much as 20%

Here is a major advance in the field of power transmission—the fully proved Gates Super HC V-Belt, developed in the world's largest belt-testing laboratories at The Gates Rubber Company.

With the Gates Super HC V-Belt, you can have the lowest-cost, lightest-weight, most compact mul-

ti-ple V-belt drive you can put on any machine! Sheave diameters can be reduced up to 50%, sheave widths 30% to 50%, center distances 20% and more!

On new drives, the cost of a Gates Super HC V-Belt Drive is as much as 20% less than present V-belt drives of the same hp capacity!

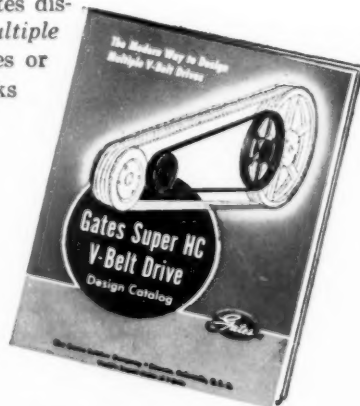
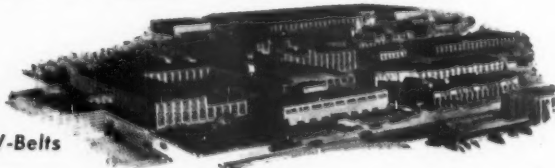
Learn More About The Cost-Saving Super HC Drive

For detailed information on the Super HC Drive, contact your nearby Gates distributor or Gates Office for new booklet, "The Modern Way to Design Multiple V-Belt Drives." For utmost space, weight and dollar savings in new drives or drive replacements, specify Gates Super HC V-Belts and Sheaves. Stocks immediately available in principal industrial centers.

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World's Largest Maker of V-Belts



Gates Super HC V-Belt Drives

Highlights of This Issue

✓ New Horizons for Purchasing

Each new period of purchasing progress brings forth the warning that this is no time to rest on our oars. Hackneyed as it is, the advice was never more timely or urgent than now. We're all in the beginning of a period of industrial expansion and technological advancement unequaled in history. Are we in purchasing ready for it? For an analysis of the new challenges and new opportunities facing the purchasing agent in the next few years see page 60.

✓ The P.A. As Materials Manager

Getting down to specifics, one of the biggest challenges to purchasing is in the field of materials management. If current trends continue the P.A. will be faced with a dilemma: to let himself be absorbed into someone else's material management system, or prepare himself to head the system. In this issue we start a special series on the relation of materials management to purchasing. Throughout the year, authorities in the field will examine the nature of the concept and the part purchasing should play in it. The series starts on page 64.

✓ Make-or-Buy: A Re-evaluation

A prominent purchasing executive contends that too many of his fellow P.A.'s dodge the real issue when it comes to make-or-buy. This is particularly true, he holds, in the small or medium-sized company. Make-or-buy analyses are just as much in the province of the purchasing agent as standardization or value analysis, he says. For a new, critical, but constructive look at make-or-buy, see page 72.

✓ Big News About Small Orders

When a P.A. has trouble with small orders, nobody's surprised. But when he finds a way to solve the small order problem, that's news. That has been our experience, at least. Just when we think the subject of small orders has been exhausted, there's a new burst of interest in it. The latest approach to handling small orders is, described on page 70.

What's Coming in Future Issues

A Special Report On How Chrysler Buys—Is Standardization Really Worthwhile?—Legal Aspects of Purchase Orders—Purchasing Capital Equipment—How Kaiser Aluminum Co. Buys—How to Cut Freight Costs

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on Inquiry Card—Page 32

JANUARY 5, 1959

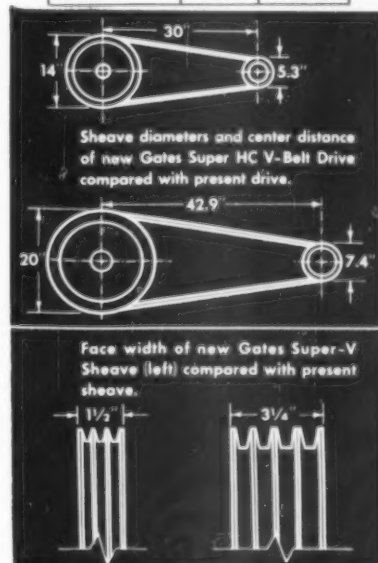
How savings multiply with new Gates Super HC V-Belt Drive

The cost of a new Gates Super HC V-Belt Drive is as much as 20% less than the cost of a drive of comparable hp using present V-belts. But the lower cost of the drive itself is only the initial purchasing economy.

Further economies are realized on drive equipment, such as housings and bases—economies in materials, production time, shipping costs.

Shown below are space savings of a typical installation...

	Present Drive	Super HC Drive
DriveR Sheave	7.4	5.3
DriveN Sheave	20.0	14.0
Center Distance	42.9	30.0
Belts	4-B128	3-3V900



Super HC V-Belts also have these important Gates features...

1. **Flex-Weave Cover** (U.S. Pat. 2519590) A Gates exclusive. Makes cover more flexible... prolongs belt life.
2. **Concave Sidewalls** (U.S. Pat. 1813698) become straight as belt bends insuring uniform contact with sides of groove. Uniform contact means less wear... far longer belt life.
3. **High Electrical Conductivity** is built in for safer drives in explosive atmospheres.
4. **Oil, Heat and Weather Resistance** is insured by use of special rubber compounds.



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arctic
or tropic



POWELL

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Handling fluids at sub-zero temperatures or at super-heat — or any of the temperatures in between — is no problem if you install Powell valves. There is a Powell Dependable Valve to meet your most exacting flow-control requirements, no matter what the extremes of your needs.

The complete Powell line includes all types of valves in bronze, iron, steel and corrosion resistant metals and alloys, for pressures from 125 to more than 2500 pounds W.P. Consult your local distributor (there's one in most major cities) or write to:

The Wm. Powell Company • Cincinnati 22, Ohio
Dependable Valves Since 1846

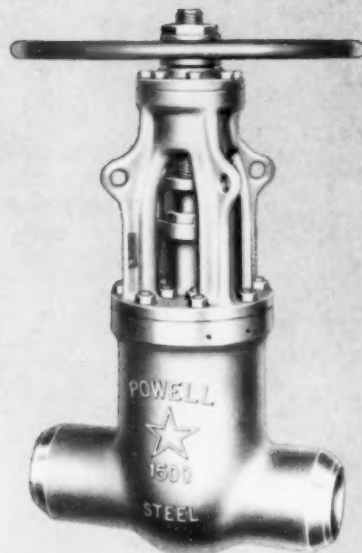


Fig. 11303 W. E.: Steel O. S. & Y. pressure seal gate valve for 1500 pounds W. P. at high temperatures. Powell pressure seal valves are available for working pressures from 600 through 2500 pounds.



Fig. 86190: Steel union bonnet globe valve for 400 W.O.G. Designed for liquefied petroleum gas service.



Fig. 2453G: Large 150 pound stainless steel O. S. & Y. gate valve for low temperature service. Can be furnished with interchangeable solid or double wedge disc.

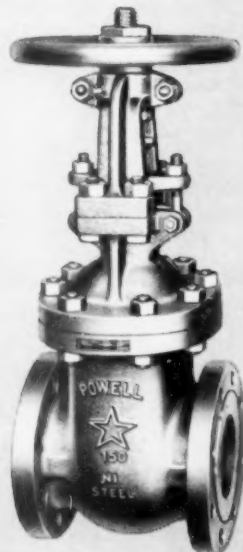


Fig. 1503 Mod.: 3 1/2 inch Nickel-steel O. S. & Y. gate valve for low temperature service.

POWELL...world's largest family of valves

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Recognition: Let's Start At The Beginning

ONE OF THE commonest complaints among purchasing people—particularly those in small companies—is that it's easy to talk about recognition but hard to get it. We talk a lot about the need for getting our story across to management, the argument goes, but very few people have practical ideas on how to do it. How deep and widespread this feeling is was partially revealed in the Harbridge House Report at last year's N.A.P.A. Convention.

To a certain degree the complaints are justified. Big company purchasing agents have all kinds of elaborate machinery to publicize their accomplishments. They have periodic reports to management; cost reduction reports; company publications; staff meetings. But the little fellow is often caught in a trap. He reads about the importance of the function, the need for reports, the necessity for having something to talk about. But his management doesn't read the P.A.'s publications, so he can't be sure the message is getting across. The company just kind of grew up to its present size, so an organized system of reporting was never set up. And the P.A. is never quite certain that the performance of his department is in line with management expectations and objectives. Where does he start?

One of the most astute and ambitious small company purchasing agents we know has an answer. It's suspiciously simple. But the more you look at it, the sounder it seems.

Toward the end of each year he takes a kind of rough personal and departmental inventory. In simple terms he analyzes his personnel (2 buyers, 1 clerk) performance, his own performance, organization, objectives, etc. The outlook on supply and prices of major raw materials is summed up. Particularly good buys and major cost reduction projects are reviewed. Every attempt is made to keep the analysis factual and objective, and elaborate statistical compilations are avoided. The result is a broad picture of the department and its activities that would be valuable to the P.A. if it never got outside his office.

But in this case it does. The P.A. sends a carbon of the report to the president with the simple statement that he might be interested in it. Because no one else in the company makes formal reports, the P.A. figures, is no reason why the president shouldn't get a peek at how his purchasing department is going.

The results so far have been good. The president reacted favorably to the "report" and has shown new interest in the department. He has taken the initiative in putting into motion a couple of projects the P.A. had only broadly hinted at. There is definite feeling in purchasing that the department is getting greater recognition and support.

Perhaps this business of getting management recognition has been too muddled up with complicated language and technique. Maybe we should start at the beginning and creep before we walk, get to know ourselves before we ask others to know us. It's worth a try.

Paul V. Farrell

REPORT FROM RYERSON

on Services and Products in Stock

In addition to the products shown below, you can call on Ryerson for flame-cut steel shapes, fabricated steel for reinforced concrete or steel frame construction—many other products and services. And equally important are the specialists who carry out the Ryerson quality control program

—see that customers specifications are *exactly* met, that every order is correctly filled and promptly delivered. As a result you get unequalled service and certified quality when your company calls Ryerson for steel, aluminum, industrial plastics and machinery.



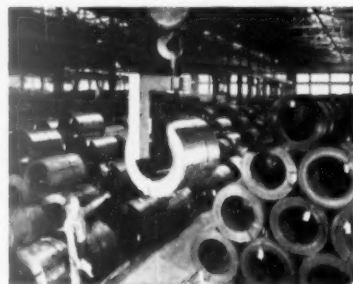
CARBON STEEL & ALLOY BARS
Most complete range of types, shapes and sizes as well as largest tonnage.



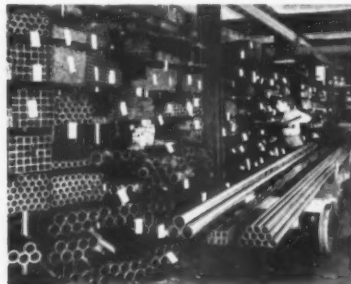
STRUCTURALS—I-beams, H-beams, channels, angles, tees and zees—all high quality steel to ASTM spec. A-7.



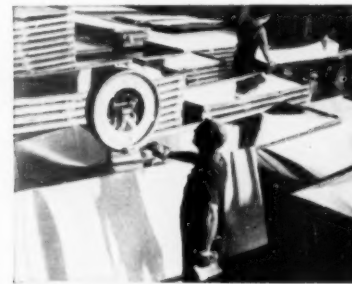
PLATES—14 types including special low carbon steel plates for forming and welding, leaded New E-Z-Cut, etc.



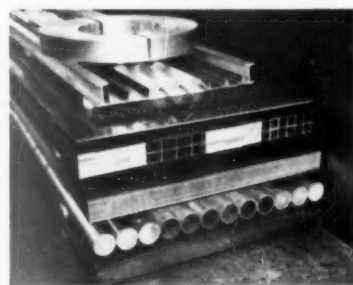
SHEET STEEL & STRIP—More than 20 different types in pattern sizes, cut-to-order sizes, strip coils, etc.



TUBING—Seamless and welded steel tubing—mechanical tubing, fluid line, pump cylinder and structural tubing.



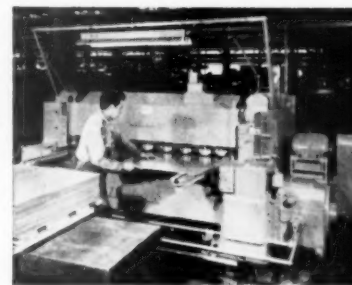
STAINLESS STEEL—For immediate delivery. Over 2351 sizes, shapes, types, finishes: sheets, plates, bars, pipe, etc.



ALUMINUM—At many Ryerson plants—sheets, coils, plates, bars, tubing, architectural and structural shapes, etc.



INDUSTRIAL PLASTICS—PVC pipe, fittings, sheets and rods, rigid Kralastic and flexible polyethylene pipe.



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A Letter from the Publisher

Plan for Purchasing Progress In 1959

EVERYTHING we do or print is calculated to instruct, improve or interest purchasing agents.

We published this pledge in our first issue, over 44 years ago. And we have continued to use it as a test for everything that goes into the magazine today.

In order to better fulfill this pledge, we have made changes in our publishing policies from time to time. For example, just a year ago, we changed frequency of publication. *PURCHASING* now comes to you 26 times a year instead of 12 times.

Reader response to this change was indeed gratifying. The only criticism came from those who asked: "Why didn't you think of this years ago?"

We are naturally pleased with this response, but in the publishing field, as in purchasing, it is only possible to stay on top by constantly striving to do a better job and by keeping abreast of our readers' information requirements.

This, of course, is why our editors travel well over 100,000 miles a year and visit literally hundreds of different purchasing departments.

Their reports indicate that 1959 will be a critical year for purchasing executives. The recession is over. Economists predict that this will be a year in which new highs in sales and production can be expected.

Buying in the boom year 1959 will be a great challenge for the purchasing agent. His volume of purchases and his opportunities for profit-making will be the greatest ever. But the purchasing job will also be tougher than ever before. Problems in supplier relations, paperwork, inventory control, etc., will be intensified by boom conditions. And management certainly isn't going to let up on pressure to cut costs.

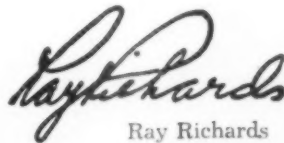
Our editorial plan for 1959 is especially slanted to help the purchasing executive cope with the problems of buying in a boom year. It includes three new programs:

● **Progress in Materials Management.** The purchasing profession has now, we believe, reached the point where the purchasing agent is about to evolve into a materials manager responsible for all phases of procurement. In a new series of articles, the editors will report on this development and try to provide hints on what the purchasing executive should do to reshape his role in policy formulation.

● **Purchasing Techniques of the Future.** Engineering authorities say we are now going through a new industrial revolution and economists predict fabulous growth in production and income. Purchasing techniques must keep pace. For this reason, the editors of *PURCHASING Magazine* are planning a series of integrated issues in 1959 which will deal with new methods in purchasing. We will present case studies of effective purchasing practices at individual companies and also use the survey approach to cover new ideas from groups of companies.

● **Service to Associations.** In the past, purchasing editors have been called upon to speak at various Association meetings. Now this service is being expanded into an organized "Speakers Bureau." Ideas on such subjects as purchasing economics, paperwork, value analysis, etc., have been gathered together for a series of talks which we believe will be of value to purchasing people all over the country.

We are quite enthusiastic about the changes we are making in 1959. And we hope you will like them too.


Ray Richards
Publisher



The Challenge To Purchasing

WHAT YOU can say about purchasing at the start of 1959 could have been (and probably was) said at the start of 1919, 1929, 1939 and even 1949.

Those were starting dates for big and profound changes in our economic and social life. So it was safe, when speaking of purchasing and the national economy, to talk of "new challenges", "new opportunities" and the like. Most people were just a little bit hazy as to what was coming—but it was fairly clear that things would be different.

The changes turned out to be greater and deeper than most of us thought. Purchasing survived them and in general thrived on them. As a function, and as a group of people, it lived up to the challenges of wars, shakeouts, depressions and booms. And it reaped its rewards in professional advancement and greater recognition.

Now it's time to dust off the hackneyed phrases (which is a hackneyed phrase) again. There has rarely been a better time or better excuse for using them. The number and variety of our problems—both short- and long-range—will be greater than ever before. Any school child knows that the world of tomorrow isn't something to look for a decade from now. It's pressing on us from year to year. And any reasonably well-informed businessman need not guess wildly at what's coming. Forecasting, while far from a perfect science, is an increasingly accurate instrument for charting an economic course.

What's Ahead For Purchasing?

What can be seen in the months and years ahead to justify this new challenge to purchasing? And what can P.A.'s do about it?

The first big change is upon us. Recovery from the '57-'58 slump is well under way. No runaway



boom is due, but pressure will be on purchasing (1) to get material into the shop to fill new orders, and (2) to resist the inevitable upward push on prices that better business brings.

On the one hand this means that purchasing has to fight for a reasonable, flexible inventory policy. Panicky slashing and rebuilding of inventories with each swing of the business cycle (almost always on management demand) will undercut the best organized purchasing program.

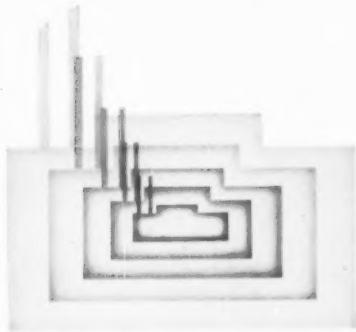
On the other, it calls for a closer look at the state of the art of negotiation in your department. Even in the short time the recession lasted buying habits can get sloppy. Price concessions wrung out of vendors hunting for business are one of the cruder forms of buying. True negotiation is a job that requires discrimination, intelligence and a highly cultivated sense of value. It may be too late a year from now to try to develop them in your buyers. They're needed now.

Competition is sharpening. The American consumer wants to buy, but he's shopping for value. He must be persuaded to buy, according to the University of Michigan's latest authoritative study, "by products which are judged to be attractive and serviceable and offered at prices believed to be 'right.'" To get this business and maintain a reasonable profit margin, producers must fight the toughest kind of a cost battle. And the most logical place for them to concentrate their forces is in purchasing, which spends close to half of every dollar a company makes.

If the consumer is value-conscious, the industrial P.A. must be more so. If the consumer is buying selectively, the industrial P.A. must go him one better. Value analysis and purchasing research can no longer be looked on as luxuries of the rich and powerful. They must be put to work in one form

P.A.'s will have to fight the price push

Value analysis is no longer a luxury



Never before has so much been asked

or another in every company feeling the pressure of competition. Not only buyers but vendors will have to be indoctrinated and trained in value analysis.

Value buying must be understood and supported by other departments in the company. The pressure of competition will force the adoption of the concept in one form or another. Purchasing will make a fatal mistake by not taking the lead in promoting and applying it.

Technology Is Reshaping the World

Industrial technology is advancing with startling rapidity. It is making such progress, according to a study by the Du Pont Company, that it could well "reshape the world in a single generation."

Industry, as a principal participant in this advance, will put new demands on all its departments to maintain or improve its technological position. Purchasing will have to play an important role in supporting the efforts of research and development departments.

Population growth and industrial expansion will hit new heights within a few years. Investment in new plant and equipment will get rolling at a record pace again by 1960. And the Census Bureau estimates that the country will have close to 200 million people—all of them customers—by 1965. This will, of course, require new manufacturing facilities and increased production.

In terms of volume alone, the P.A. will find it necessary to increase the size and scope of his job to support this growth. Aside from the value and quality requirements discussed above, purchasing will need many more vendors and better long-range relationships with suppliers. Purchasing executives will have to start planning now for larger, more complex departments. The haphazard methods of organization and selection and training of personnel that marked purchasing's early growth cannot be tolerated.

It's neither fair nor accurate to imply that purchasing people have been slow to grasp the sig-

of the purchasing executive ...

nificance of these trends or that purchasing agents generally haven't met and often exceeded modern management's demands. Every period of industrial and technological advance in the past half century has produced new leaders and new ideas in purchasing. But things are moving so fast now, it's not enough to wait for a leader to show up and then follow him. Just to keep pace with progress, the individual P.A. has to think and act beyond his present normal limits.

Consider, for example, the concept of materials management. As the perceptive lead article in this issue points out, "Materials management is still the least understood and least recognized major function of business." Yet only a few weeks ago, in these pages, another authority declared: "Purchasing is at a dramatic crossroads. It is faced with the prospect (1) of being absorbed into a broader scope material management structure, or (2) expanding its vision to embrace the entire material system."

There's no contradiction here. Actually the two statements together succinctly sum up the challenge to purchasing: Materials management logically and inevitably will be a major function in industry. You are in a better position than almost anyone in your company to understand it. Prepare yourself now to lead it, or you'll be absorbed into it.

Meanwhile, there are any number of subsidiary but directly related problems to be faced. National Association of Purchasing Agents committees and other leaders have pioneered in investigating such areas as materials management, value analysis, the development of accurate measurements of performance, the establishment of professional standards, the improvement of purchasing education. Their contributions to purchasing's advancement have been great—but the greatest has to come from the enthusiasm and participation of the individual purchasing agent.

These then are some of the basic challenges the purchasing agent now has to face. Some are clear and urgent. Some are relatively distant and ill-defined. But all demand an answer—and the answer has to be given now, because progress can't wait.

**You can't wait for
a leader**

**Will purchasing be
absorbed?**



The Purchasing Revolution

The Push Toward Materials Management

By Dean Ammer

Managements will soon realize materials management is a separate and distinct activity with a scope far broader than that of most purchasing departments.

WHO is better qualified to buy material than the man responsible for specifying and using it? Who knows more about what quality is needed? Who understands more intimately the problems created if a supplier fails to keep a delivery promise?

In 1900, the concept of a separate and independent materials activity was a novel one to most managers. And, to most, it would have undoubtedly appeared rather ridiculous. Why create extra overhead by hiring a purchasing agent to do a job that others could do better?

The fact is, there is no need for a separate, independent materials function if just one simple premise is accepted: that skill in *managing* materials automatically accompanies skill in *specifying* and *using* materials. That is, a good engineer or a good manufacturing manager is, by definition, always a good materials manager.

This premise was widely accepted 50 years ago. And even today some companies still accept it. But modern progressive managements know this is a false concept. They know that materials management is a separate skill in itself. They now accept the premise, that materials management is a basic organic function of the business—every bit as important as sales, engineering, manufacturing and finance.

Lack of Understanding

Materials management, however, is still the least understood and least recognized major function of business. Though most companies have strong purchasing departments, only a handful have a completely integrated materials management activity. The reason is partly historical. It is an inevitable result of the evolution of the giant corporation from the small family-owned business.

Materials management is just as essential to the small shop

with a half-dozen employees as it is to the corporation with a half-million workers. But in the small business, there is little functional specialization. The owner-manager handles all administrative jobs. He is usually his own materials manager, chief engineer, controller, manufacturing manager, marketing manager, and personnel manager. The typical small business can't afford the luxury of specialists. The owner-manager may rely on an attorney and public accountant for specialized advice but he certainly cannot afford full-time specialists.

Growth Brings Problems

But when the business begins to grow, the work load on the owner-manager gets heavier and heavier. Fortunately, profits grow with sales and in due time the owner-manager feels prosperous enough to hire some one to help him with his administrative chores. He may get an "assistant". In this case, there is some sort of informal division of work between the owner-manager and the assistant. Or the owner-manager may get an "office manager" or "someone to take charge of the shop."

The addition of a second full-time administrator is one of the most significant steps in the development of a business. It is at this point that an "organization" begins. Problems in communication and division of work develop. Responsibility is no longer centered in just one individual.

As the organization continues to grow, it becomes almost infinitely more complex. But the changes are not as far reaching as the one that is made in a still minuscule organization when work is divided in some fashion between two full-time administrators.

In the one-manager organization, all materials management activity is naturally under the jurisdiction of the owner-manager. When a second manager is hired, materials management is often divided between the two managers, and this division of materials management responsibility is inevitably a permanent one. Most companies enjoy unified materials management only

in their infancy and, unfortunately, at this early stage, the company is too small to get many of the benefits of scientific materials management.

Further Specialization

Work can be divided between the two full-time managers in a number of ways, of course. Typically, one manager may take over the running of the shop while the original owner-manager devotes his time primarily to sales and engineering and also continues to handle contracts with key suppliers.

In this case, most materials management responsibility will be vested in the man who runs the shop. He will be in charge of buying all non-productive supplies. He will supervise receiving, shipping and stores activities. And he will probably determine most materials requirements.

As the company continues to grow and eventually reaches the stage where it has perhaps a hundred employees, the "two-manager" type of organization becomes increasingly inadequate. Further functional specialization is necessary. Full-time managers of finance, production, engineering are needed to help. And, finally, a separate purchasing function appears. Often the purchasing agent doubles as office manager until the business grows to the point where it can afford

to have the purchasing agent devote all of his time to purchasing.

Enter the P.A.

The new purchasing agent isn't a materials manager, by any means. He takes over the buying functions formerly handled by the manufacturing manager and the individual foremen. He may also take over certain other activities such as stores, receiving, etc. But manufacturing retains at least part of the over-all materials management responsibility. And, fortunately, top management usually continues to handle the dealings with key suppliers.

At this stage in the growth of the typical company, management has a purchasing function strictly as a convenience. The P. A. is definitely a second stringer on the management team. He has yet to prove himself. And, more often than not, top management is still secretly convinced that it can do a better job of buying than its purchasing department. The P. A., although he usually has the power of "business or no-business" with 90% of the company's suppliers, has yet to earn the confidence and respect of management. In pay and prestige, he's a cut above the foremen in the shop. But rarely does he belong to the same country club as the heads of manufacturing, sales, and finance.



Materials management skills can be sharpened with a materials management game developed by the American Management Association. Players' decisions are fed into a computer. Winner of the game is the team that makes the greatest "yearly" profit after a few hours of play.

If the P. A. is a good one and his management is reasonably alert, he won't remain a second class citizen in the management community indefinitely. Through superior performance he will gradually convince his boss that there is a lot more to purchasing than having lunch with suppliers and supervising a purchase order typist. He won't be able to do this overnight, however. In fact, it could conceivably take a decade or two.

Unfortunately, it is hard to change habits—even in the best run organizations. Management may accept the theory that buying is a separate and distinct skill. It will agree in theory that there is a distinct difference between proficiency in managing materials and proficiency in specifying and using them. But management's ideas in practice are often different.

The individual manager, upon objective self-analysis, will, in effect, probably decide that he personally is the exception to the rule. Not only is he an expert in specifying and using, but he also knows the answers in materials management. And so the process of getting recognition for purchasing is not a fast and simple one by any means.

Who Manages Materials?

Despite problems, purchasing does eventually get recognized as

a separate and distinct function in actual practice. A recent survey shows that roughly 80% of all purchasing directors report directly to top management. And the majority play an active role in helping make company policy; their role is much broader than that of the skilled specialist.

But few of these purchasing directors can be called materials managers. The function of materials management—which is the control of the flow of material from supply sources to the production line and from production to storage and common carrier—is still not unified organizationally.

In the typical big corporation at least two departments—production control and purchasing—are constantly jockeying for supremacy as top dogs in materials management. Purchasing has a virtual monopoly on the source selection phase of materials management. It often gets in the act on the inventory control and traffic phases. Production control usually rules when it comes to determining requirements, receiving, shipping, non-productive stores, in-plant expediting, and material control.

Usually neither department ever gains absolute supremacy. As a result, there is rarely perfect coordination and achievement of inter-related materials objectives. For example, purchasing may wish to buy in larger

quantities in order to cut costs. But if it does, average inventories will be higher. And this will conflict with production control's objectives of high inventory turnover and low obsolescence.

In all too many companies, basic conflicts of objectives of this type are resolved by the sort of compromise that is more political than economic. As a result, in too many cases, no one is really managing materials. Instead specialists, working independently and often at cross purposes, are writing requisitions, negotiating prices and issuing orders, expediting, receiving materials, etc.

Product of Evolution

The dispersion of materials management among several competing departments is, of course, the natural product of the evolution of the typical corporation. In the early stages of the company's history, there was unified materials management; the entire job was done by the owner manager.

As the company grows, materials management responsibility is spun off in several directions. One element, the determination of requirements, is handled, at an early stage in the company's history, by the shop foreman or superintendent. This job is eventually taken away from line supervision and given to a separate production control department. Responsibility for the buying phase is passed, by degrees, directly to a purchasing specialist. Both departments grow and absorb related functions. The end product in many cases: conflicting objectives and strained working objectives.

While it is true that the materials organizations of today are far from perfect, they are tremendous improvements over those that prevailed 50 years ago. But superior forms of organization will continue to evolve. Their structure, and the principles that lie behind them, will be discussed in detail in succeeding articles in this series.

This is the first article in a special series on materials management. The second article, to appear in the February 2 issue, will deal with the organization and operation of the materials department.



This chart, developed by Rheem Manufacturing, illustrates how essential efficient materials management is to profitable operation.

BUYER		MKT. NO.		DATE ORDERED		DATE		DUE OR MATL. CODE NO.		PRICE/C		WTD.		QUANTITY		CL. #		REC'D	
PURCHASE CONTROL																			
BUYER CODE		MKT. NUMBER		DATE ORD.		A		B		WEEKLY RATE									
D		21-36800		238						15,000									
CHANGE DATE		DATE RECEIVED		DUE OR MATL. CODE NO.		PRICE/C													
				0004124057		67													
QUANTITY RECEIVED		BALANCE DUE		WTD WEEK		QUANTITY													
				348		200,000													

A card like this is filled out from data on the purchase order at G. E.'s Meter Department. It is then key punched and used to run off weekly commitment reports.

Weekly Status Reports Aid Inventory Planning

Use of punched card equipment makes it easy to compile weekly reports of new commitments, receipts, and overdue items.

INVENTORIES aren't planned on a hit-or-miss basis at General Electric's Meter Department in Somersworth, N. H. "Weekly status reports not only show us where we are right now but also give us a pretty good idea we're going to be three months from now," Materials Manager E. C. Driscoll declares. Each week, Driscoll gets reports that show:

- Current receipts of materials.
- Due and overdue shipments of purchased materials.
- Unfilled purchase commitments due within the next 17 weeks.

Since he knows what production plans are, Driscoll can readily make accurate estimates of his anticipated inventory position. Naturally such information is also invaluable for the Meter Department's financial management in projecting cash needs.

Use Punched Cards

It isn't much of a job to compile all this useful data either—provided there's punched card tabulating equipment available. When the order is issued nine entries are made on a blank tabulating card. Noted are: (1) buyer code; (2) purchase order number; (3) date ordered; (4) inventory classification; (5) weekly usage; (6) drawing or material code number; (7) price; (8) week delivery is required; and (9) quantity ordered.

All this information is then key punched on the tabulating card. Since the report is a weekly one, a three digit coding system is used for order and delivery date.



"Weekly status reports not only show us where we are right now but give us a pretty good idea where we'll be three months from now," declares Meter Department Materials Manager E. C. Driscoll.

The first two digits indicate the week; the third indicates the year. For example, the code 348 indicates the 34th week of 1958.

Once the data is key punched, it is easy to run off weekly reports of projected deliveries and commitments. When an order is amended, a second tabulating card is key punched to show corrected data. Other columns in the card permit data on quantity received, date received, and balance due to

be recorded and key punched. This makes it possible to run separate weekly reports of receipts and due and overdue items.

To keep clerical costs down, control is limited to "A" and "B" inventory items—i. e. those with a usage greater than \$10 a week. The result is a system that takes much of the guesswork out of inventory planning at reasonable cost.



The production review committee plans the refinement of a component design. The two purchasing representatives at left contribute vital in-

formation about the quality, service, and price of the materials that go into the component.



The fabricated belt pulley for tractors (r.) is 40% cheaper than the cast pulley formerly used. While the

How to Get Fewer Cost Reductions in Purchasing

PRE-PRODUCTION purchase analysis means fewer opportunities for cost reduction by the purchasing department of Allis-Chalmers in Milwaukee. But no one minds. For purchasing, with the help of manufacturing and engineering, is playing a bigger role and making a greater contribution to company profits than ever before. It is doing this with pre-production purchase analysis. By applying value analysis techniques to components while they are still in the design stage, it is possible to get the advantages of value analysis from "Job No. 1."

Playing the key role in the Allis-Chalmers program is a Review Committee for Value Analysis consisting of a representative from design, a representative from manufacturing, and two pur-

chasing agents—one for raw materials and one for finished components.

Boost Quality, Cut Cost

This committee reviews every important design. And it often makes suggestions for changes that boost quality and cut costs. Manufacturing reviews the design from the standpoint of manufacturing practicability, while purchasing looks at it in terms of supply sources, etc. The committee carefully checks all cost estimates for each design to make sure that cost objectives will be met and that manufacturing problems will be minimized.

The pictures on this page show how the committee applies value analysis principles and contributes to Allis-Chalmers' profits.

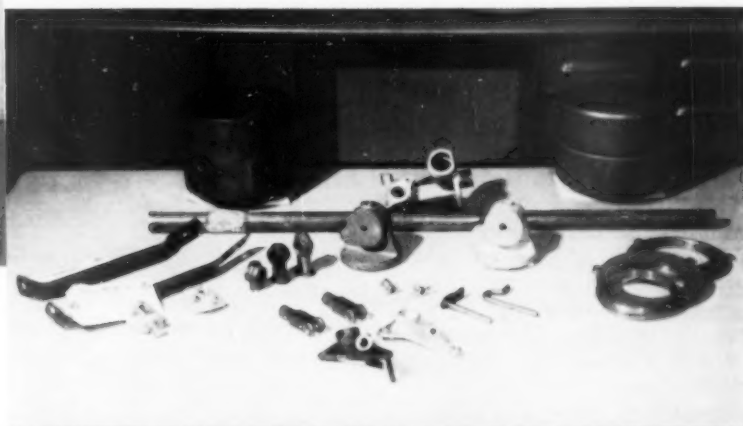


A 58% saving was made by substituting an aluminum shell mold (r) used in large circuit breakers for manganese bronze castings. Man-



quality was not changed, savings were realized by eliminating machining and balancing of the casting.

If value analysis ideas are incorporated in the design stage, there'll be fewer opportunities for reducing costs later on but profits will be bigger than ever.



These twelve parts are a few of the hundreds at Ailis-Chalmers that were improved through value analysis.



facturing problems of core sand removal were also eliminated by the substitution.

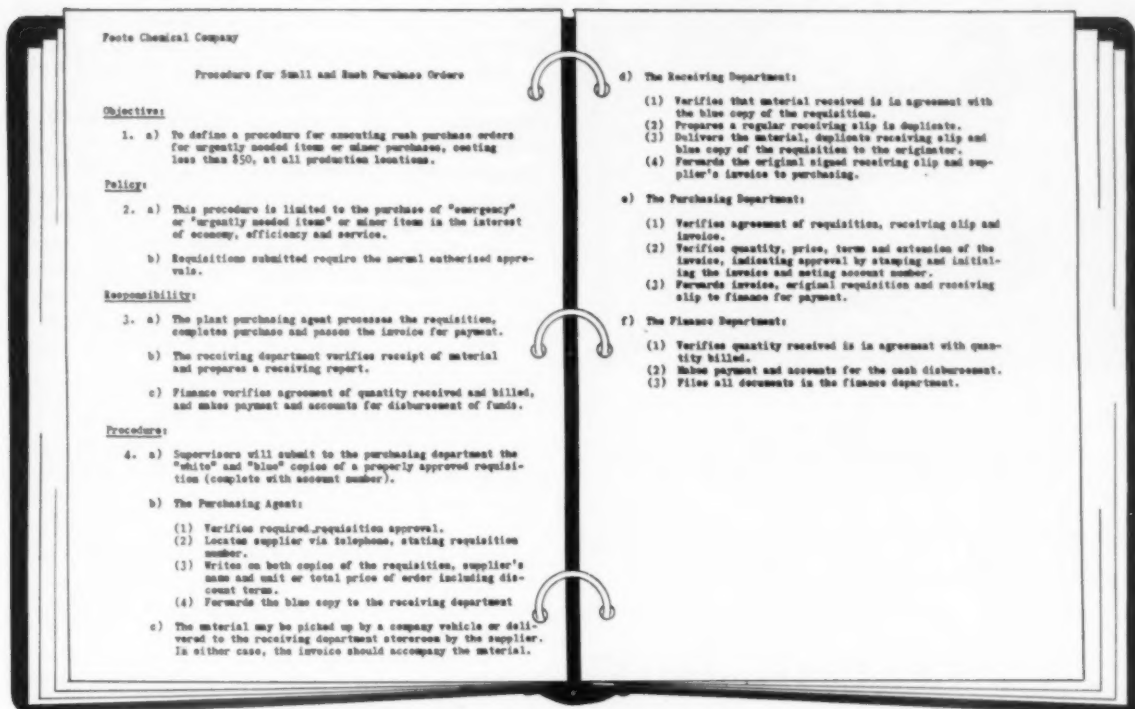


Through value analysis, the price of this power director clutch plate was

cut 30%, while rejects and rework charges were virtually erased.

By Walter J. Brooking, Assistant Director of Purchasing,
Foote Mineral Company, Philadelphia

PURCHASING



Foots Chemical Co.'s system for handling small and rush orders is described above.

editing requirements of the accounting department.

We were opposed to handling these purchases out of petty cash because of the lack of control. For that matter it seemed to us that any method in which payment is made at the time the order is issued was undesirable. Again, there isn't enough control. There are too many chances for error in price and delivery. **The solution seemed to be to eliminate the purchase order completely for rush and small orders.**

We realized that in certain cases the special nature of the items ordered required a purchase order for future reference by the purchasing department. But in most cases involving small or rush purchases, the purchase order is not essential. A typical example is magazine subscriptions. And here the use of a purchase order may even be a disadvantage. For example, if orders for magazines were left open until the receiving copies were in, the orders might never be closed.

As a result, we developed a system for purchasing rush and small value items (see cut above)

without a formal purchase order. The system works equally well with either type of order. It usually helps get that special kind of purchase out of the way with a minimum of clerical work.

By eliminating the official typed purchase order we can now close out the rush and small order purchases in much less time. As a result, there are now fewer open purchase orders to follow up.

Value—\$10 Per Order

After a year's operation, we found that we were using the new system in almost 20% of our buying transactions. Out of approximately 15,000 orders issued at all purchasing locations, totaling almost \$10 million, slightly over 3000 were processed according to the "rush procedure." The average value per rush order was \$10.

In no case was there a problem because we did not retain a purchase order record.

Breakdown on Savings

Rush purchase orders can now be processed much more quickly which means faster deliveries and

less trouble for the purchasing department.

While it is not possible to assign an exact dollar saving to the program, we did accomplish the following:

- At least \$150 in postage has been saved.

- Over 3000 purchase order forms at ten cents each have been saved, for another \$300.

- The time and attention required to type and process over 3000 purchase orders has been eliminated. While it is difficult to evaluate this portion of the savings, this is the area where we saved the most money. It is not unreasonable to assume an average saving of about \$1 per order—or a total of \$3000 per year.

Use of this procedure has made a substantial improvement in the operation of the purchasing department. It fills a need which exists in greater or lesser degree at all of our purchasing locations. But no matter how impressive the savings, the new procedure does not keep us from continually attempting to eliminate rush and small order purchases whenever possible.



How to Know When to Make or Buy

By Norman P. Levine

ONE OF the major cost reduction techniques which is not being used as much as it should be by purchasing agents is the make or buy approach. The reason for this is the lack of clear-cut definitions as to when it is proper to use either course of action.

Literature on the subject always seems to confuse the issue by showing a great many factors which all add up to a lot of ifs and buts. Writers further compound the confusion by failing to indicate satisfactorily what type of make or buy situation they are discussing.

Much of the confusion can be eliminated if you confine your investigations to two factors; price and capacity. Then apply these two factors to the three basic make or buy situations. This will make it easier for you to decide what action to take.

When You Buy on the Outside . . .

The first basic make or buy situation is when you can buy on the outside parts or materials which you could make in your own plant. Suppose you have a press department in your own plant. The John Jones Press Company quotes you a price for making a pressed metal part which you need and which your company makes. The question is—do you place the order with the John Jones Press Company, or do you continue making it in your own plant? The problem can

be resolved by analyzing it in terms of price and capacity:

Assume that our metal part has a cost breakdown as follows:

Material	\$ 30.00 M
Direct Labor	10.00 M
Departmental Overhead	20.00 M
General Factory Overhead	9.00 M
Total Cost	\$ 69.00 M

Let us further assume that there is open capacity in our own press room. The quote from the John Jones Press Company is \$80.00 M pieces for these parts. Obviously, in this instance you are not interested since you can make the same parts in your own plant for \$69.00 M.

Not All It Seems to Be

Suppose, however, that the John Jones Press Company quote is \$60.00 M. Your initial reaction might be that this amounted to a saving of \$9.00 M over your own cost. But all the new quote really does is to absorb \$9.00 of general factory overhead which will not be absorbed if the part is purchased on the outside. In addition, the departmental overhead of \$20.00 M will not be absorbed if the part is made outside. This means \$20 M should be added to the cost of purchasing the part from John Jones Press Company.

The actual outside cost in this particular instance is the \$60.00 M which you are paying, plus \$20.00 unabsorbed overhead, or a total of \$80.00 per M as against your own production cost of \$69.00 M.

When you create your own production facilities there are certain overhead elements which are fixed and which have to be absorbed by the product which is run through that department. If you buy parts on the outside that you could manufacture yourself, you are still paying for the depreciation on your own equipment. And you are still paying for the space the department takes as well as the indirect personnel in that department, such as the foreman.

As a matter of fact, most of the departmental overhead is of a fixed nature. It varies only slightly by the addition or subtraction of one particular part. This small variable overhead relating to one particular part consists of such items as the direct lubrication, electricity, etc., which might be used directly in the manufacture of that one part.

So you see that most of the \$20.00 M departmental overhead in the example is pretty well fixed. If the part is not run in that department while you have open capacity, the department overhead will have to be absorbed by the parts which are being fabricated there. This naturally increases the cost of the products you are making.

In purchasing on the outside when you have capacity of your own, the overhead which is unabsorbed should either be added to the cost of the outside purchased price or spread over the cost of the remaining products which are being fabricated in the department. Under such circumstances you cannot afford to purchase outside

unless you can buy at a price equal to or less than the total of your material and direct labor. In the example, the price would have to be \$40.00 per M or less before it would pay to buy from the outside source.

Unless you are very inefficient in your use of material and direct labor, your chances of buying on the outside at a price that will save you money are extremely small. A purchasing agent is more or less wasting his time, as well as his vendors', in attempting to buy on the outside parts which he has the open capacity to make inside.

If You're Working at Full Capacity . . .

When the capacity of your department is being used to the full, here's how you can determine what to do:

You have the choice of either increasing the capacity of the department by adding equipment, personnel, space, etc., or buying on the outside. The first choice will be treated more fully under make or buy basic situation No. 2, but certainly if there is a question of an additional 2 or 3 parts involved, there will be little incentive to add additional facilities in your own plant.

Usually under these circumstances there is no choice but to buy on the outside. Naturally the purchasing agent must attempt to buy at the best possible price and should at least try to purchase on the outside at a price equal to what his standard or actual cost is as determined by the accounting department.

Thus, in the example, any price over \$69.00 per M would constitute a loss. Any price under \$69.00 per M would represent a saving. This concept is particularly useful for companies operating under a standard cost system where the standard has been set on the basis of internal cost and the purchasing department is subject to a price variance.

Analyze Capacity and Price

In this particular make or buy situation, you should forget all extraneous factors of make or buy such as labor supply, quality, scheduling and skill. Instead concentrate first on the capacity factor; then on price. It's not that the other factors are not important, but in the overall picture a decision may be safely resolved by considering only capacity and price.

The rule should be that when you have the production capacity in your own plant, you practically have no choice but to produce in your own plant. When there is no capacity, you should attempt to buy on the outside at what your standard cost would be if you fabricated the item in your own plant—or as close to that price as possible.

When You Do It Yourself . . .

The second basic make or buy situation is that of making parts or materials for which there are no facilities or not enough capacity in your own plant. Assume you are purchasing thousands and thousands of dollars worth of pressed metal parts from many different suppliers. You are now thinking about setting up your own facilities and doing all the work in your own plant. Also assume that you have sufficient labor supply, the know how, the space and the money you need.

In this situation, co-operation on the part of the accounting, purchasing and engineering departments is required to arrive at a decision, but basically the required information falls into three categories:

(1) The amount of capital that would have to be invested.

(2) The overheads that would be created in the setting up of a new department.

(3) A comparison of what it will cost you to make the part with what it costs to buy it on the outside.

Obviously, if after calculating your own costs, you find that the cost of making the part in your own plant is higher than the price you have been paying for it on the outside, the idea of doing it yourself can be dropped. But if you find,—and this will be the usual case—that you can fabricate at a lower cost than what you are paying on the outside, then the problem is to find out how much you can save.

Going back to our original example, assume that our composite purchase price of pressed metal parts on the outside is \$69.00 M. We find that we can make the same parts in our own plant at a composite price of \$60.00 per M. Let us assume further that our average use of pressed metal parts is 10 million parts per year and is likely to continue to be at least that high. Assume also that it will take a \$350,000 investment to set up your pressed metal department.

Here the problem boils down to a matter of good business based on a return on investment. In this particular instance there will be a saving of \$90,000 per year on an investment of \$350,000. This would represent a return of a little over 25% per year before taxes. Obviously it would be good business to make the investment.

The reason I say it would be good business is because it is more than the acknowledged rate of 20% before taxes which is considered a minimum in most successful businesses, for investment of capital.

Most business authorities believe the pay-out period should not exceed five years on any investment in capital equipment, and should preferably be less. This is a well recognized rule of business, and you won't get into trouble if you follow it.

The same factors apply when you have to add capacity to "make" facilities which you already

have but which are fully utilized. You still have to determine how much additional overhead will be created by the new facilities. Then you have to determine the investment necessary and compare the costs with what you can buy the parts for on the outside. The return has to be commensurate with the investment. As in the other case, this would be 20% before taxes.

If It Costs

Too Much to Make . . .

The third basic make or buy decision involves getting rid of "make" facilities which are no longer economical to operate.

This type of situation often develops over a period of years when "make" facilities originally installed are being used less and less to produce a part which is incorporated in the finished product. Take for example a plastic injection molding department. It might have been set up 10 years ago at a time when the company's product used many such plastic parts. But now many of these parts are turned out by other methods or with different materials. As a result, the plastic molding department is operating at only 50% of capacity.

The overhead of the department is not being absorbed. Parts which are manufactured in the department carry a high percentage of overhead as compared to what it would be if the department were running at close to capacity. The overhead is also much higher than in plants which specialize in making this particular part.

Two Alternatives

The company has two alternatives: First, try to cut the department down to size, by eliminating some of the space, equipment and indirect labor which make up a major portion of its overhead. This may work out, but experience has shown that as a rule it is difficult to adjust overhead proportionately to a lower capacity because some factors such as the foreman's salary remain more or less constant.

The company's other alternative is to stop making the part and buy it outside.

This is a make or buy decision which can be pretty well determined by price once you are satisfied that sufficient talent, know how and capacity are available, on the outside. They usually are.

The question now is at what price can you pay an outside supplier and still save money, if you decide to stop making the part yourself. Again, the original example can be used.

Suppose the average cost of pressed metal parts fabricated in our department was \$69.00 per M. We can go out and buy the same parts at \$55.00 per M. On the face of it this seems to be a saving of \$14.00 per M. But actually you have to

take out of this the \$9.00 per M for general factory overhead which is absorbed by making these parts in your own plant. The chances of general factory overhead being reduced very much by eliminating one "make" department are negligible. You will still need the same works manager, the plant manager, inspection, purchasing, and all of the other elements that make up general factory overhead.

Know Your Departmental Costs

But there is still a saving of \$5.00 on the average which if applied to 5 million parts would mean a saving of \$25,000 per year to the company. If the long term view is that there will be a continuing decline in the use of your own facilities it will probably pay to eliminate the department.

The rule in this case is to consider eliminating your own "make" facility if you can buy on the outside at a savings over your own departmental cost.

An important consideration, however, is that when you decide to eliminate a department, it means that every item of overhead connected with the department must go. All the equipment has to be sold or transferred to other departments where it will be utilized. The foreman and other indirect labor has to be laid off or transferred. The space itself has to be allocated to other usage. Then, and then only, are you in a position to say that you are saving money by buying on the outside at an average price which is less than your previous departmental cost.

In the above example, the entire amount of \$25,000 may not represent savings. There may be additional transportation and handling costs which must also be considered. This is fairly easy to do.

There are, of course, many advantages to buying on the outside. You don't tie up as much money in inventory; and scrap loss is reduced. In addition, if the vendor produces parts which are not up to spec, you can return them.

It is extremely important that buyers aggressively pursue make or buy decisions of the type described. It would also help if there were more aggressive selling on the part of custom fabricators of such things as castings, pressed-metal parts, screw-machine parts, four-slide parts, plastic parts of all description, plating, and for the that matter all kinds of material fabrication. There is certainly nothing wrong with a custom fabricator's approaching a manufacturer in hopes of selling him parts that the manufacturer already produces. If the fabricator can sell the parts at a lower price than the manufacturer can make them, there is no reason for them not to do business together.

However, the major effort in the field of make or buy will have to come from cost-conscious P.A.'s. Make or buy is a major cost reduction technique. It should be regarded as being in the same class as value analysis, standardization, and traffic management.

Mr. Levine is director of purchases for Cosco Products Corporation, Bridgeport, Conn. An experienced purchasing executive, he has frequently been in a position where he had to solve complicated make or buy problems.

Expressed warranties don't necessarily provide more protection than the implied warranties of the law. Thus a buyer in the know will turn down any proposed expressed warranties of less value to his company than implied warranties.

What the P.A. Should Know About Sales Warranties

By Albert Woodruff Gray



WHAT IS a sales warranty? Here's the legal definition:

"A warranty is a seller's contractual statement referring to the character, quality or title of the goods. It promises, or undertakes to insure, that certain facts are or shall be as the seller represents them.

"The warranty may be either express or implied. It is the former when created by the apt and explicit statements of the seller; the latter, when the law derives it by implication or inference from the nature of the transaction or the relative situation or circumstances of the parties."

The Barde Steel Products Corporation was involved in a suit

shortly after World War I. A contract for the sale of excess steel to the Burntisland Shipbuilding Co., Ltd. was originally ordered for the War Shipping Program of the United States. In the purchase contract the Barde Corporation had stipulated:

"The quantity, quality and description of the steel is not warranted or guaranteed. The seller therefore assumes no obligation to the purchaser except to deliver to the purchaser steel of the quantity, quality and general description ordered."

Burntisland Shipbuilding Co., the purchaser, asserted that the specifications called for plates, with the length, breadth and

thickness fixed to the fraction of an inch. It claimed that the seller warranted these plates to be of the kind, character and description so specified. It contended that the plates delivered were totally different from those specified. The court dismissed this action denying the right of the purchaser to the recovery of any damages for what it claimed to be a breach of warranty.

This is essentially what the court said: With common law the parties to a contract may by agreement limit the effect of language which would otherwise be construed as a warranty. Where any right, duty or liability would arise under a contract to sell or a sale by implication of law, it may be negated or varied by express agreement.

Latter's Importance

In a recent action in the United States Court of Appeals the importance of clauses of this character becomes apparent. Here the seller was saved from liabilities that would otherwise be imposed by law for the breach of implied warranties such as the quality or fitness of the goods.

Bids had been invited by the U. S. Army Corps of Engineers for the construction of a pump station in the South and Central Flood Control District of Florida. Before the submission of these bids the Moretrench Corporation sent proposals to all prospective

I don't care what the warranty said. You gotta give me my money back. The suit disintegrated.



There can be no terms in a contract that will eliminate a remedy in the event the goods purchased prove to be worthless, or other than that which the buyer contracted to buy.

bidders for dewatering this site.

Basing its estimate on these written proposals, the Ivy H. Smith Company submitted its bid and was awarded the contract. In the agreement subsequently made between the Moretrench Corporation and the Smith Company was this clause:

"This agreement contains all of the agreement between lessor and lessee. The liability of the lessee (Moretrench Corporation) is expressly limited to the free replacement, f.o.b. point of shipment, of any defective part or parts of the equipment furnished under or subsequent to this agreement. This replacement will be made on receipt by lessor of said defective part, f.o.b. Rockaway, N.J., provided such defect is not caused by misuse or neglect on the part of the lessee."

The court dismissed the \$500,000 suit brought against Moretrench Corp. The court said: "The Moretrench Corporation insists that the Smith Company is seeking to import into the terms of the contract, agreements not included in, but excluded from the contract. We think it may be added that this is so."

A Similar Decision

In this statement of the law the court referred to an earlier decision. There a contract by a manufacturer for the sale of refrigerating equipment contained this clause:

"The manufacturer guarantees

that all refrigerators and parts thereof manufactured by it hereunder shall be of first class workmanship and material and shall be in accordance with the drawings and specifications furnished by the buyer, to the extent of replacing F.O.B. its works, West Chester, Pa., any mechanical parts which do not meet this guarantee and which are returned to the manufacturer within one year from the date of their original shipment.

"All parts on which claim is made are to be returned to manufacturer's works without any expense to manufacturer. The manufacturer takes no responsibility for the quality or performance of the refrigerator or parts except as provided in this paragraph."

The purchaser sued for a rescission of this contract for the purchase of 6000 electric refrigerators and the recovery of the payments it had made. The purchaser contended that the manufacturer had delivered defective and inferior machines.

The above clause was interposed by the seller as a defense.

The court decided against the purchaser. It held in its decision that the limitation of warranty in the contract provided an exclusive remedy to the purchaser, and that under these terms no other remedy was available.

"As a general principle," said the court, "the parties to a contract to sell personal property may provide whatever terms they

choose. They may exclude all ordinary rights or provide that the rights of the buyer for a breach of warranty shall be limited to a certain remedy and, when they provide for an exclusive remedy, the buyer must avail himself of it or go without redress."

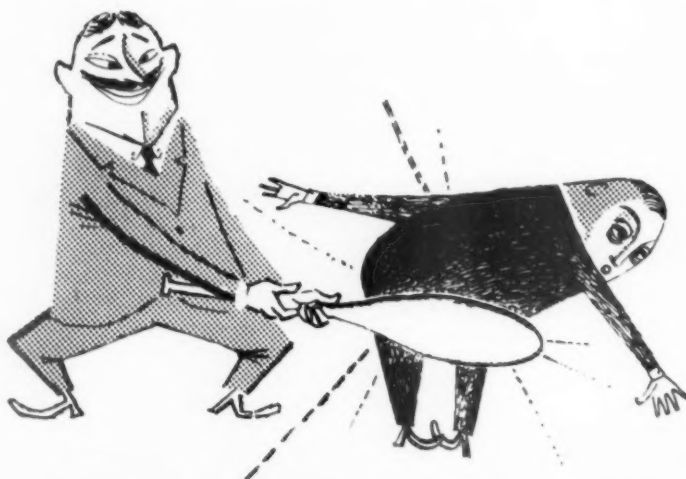
Seller Has Obligations

It often happens, however, that the seller in his effort to protect himself from the obligations of implied warranties imposed by the law, fails to have his fences tight. Suit was brought by a Louisiana purchaser recently against a manufacturer of air conditioning equipment for damages in the sale of two 7½ ton units. In the contract was the warranty that the machines were "free from defects in material and workmanship under normal use and service. The manufacturer's obligation under this warranty is limited to making good at their factory any part or parts thereof which shall, within twelve (12) months after delivery to the original purchaser, disclose to the manufacturer's satisfaction in their investigation, to have been defective."

In this instance the court held that this stipulation failed to include the obligations imposed by implied warranties. "The express warranty," said the court, "guaranteed the machines against defective material and workmanship and obliged the manufacturer, during the period of one year from delivery, to supply any parts whenever it was shown to the manufacturer's satisfaction that any particular part of the machine was unsound.

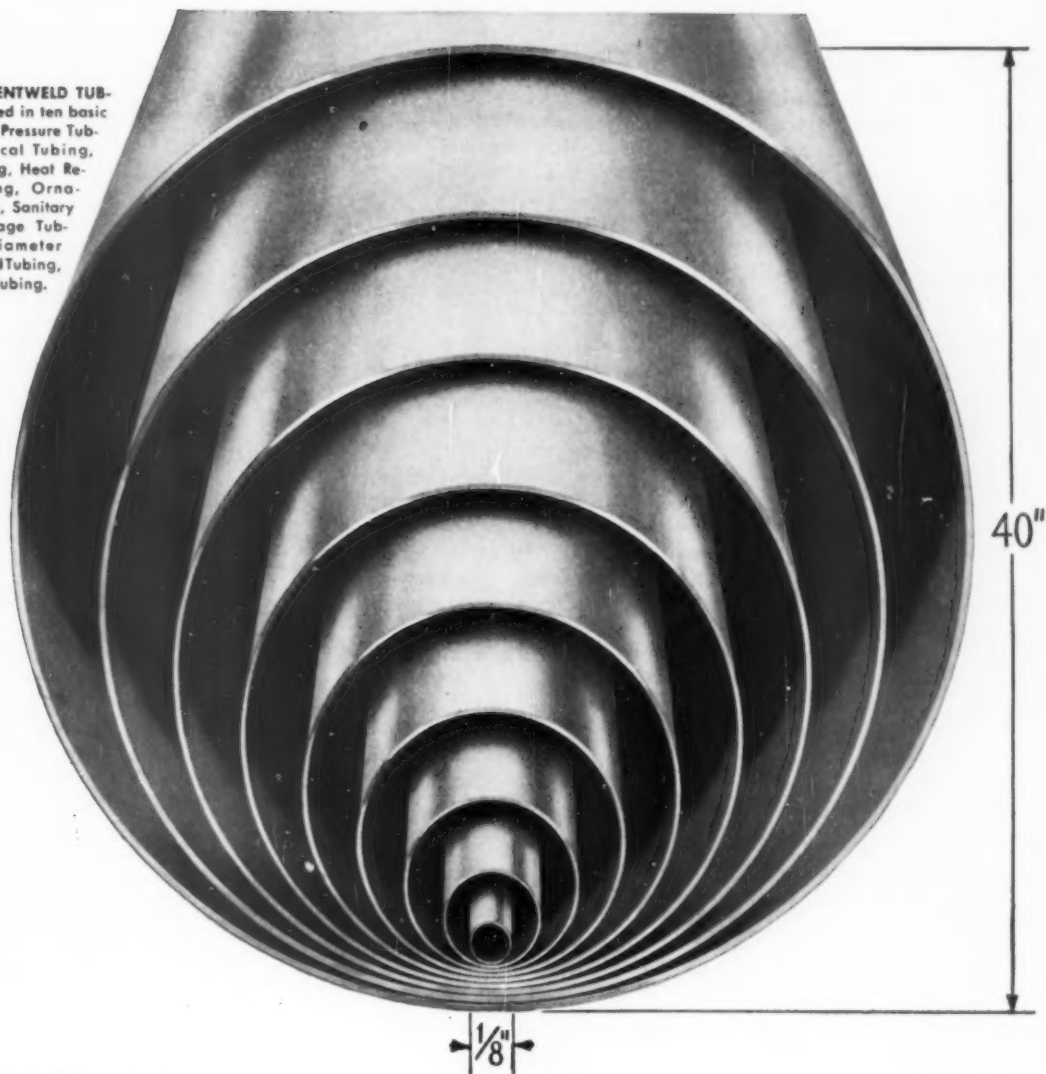
"But this warranty did not state that it was given in lieu of all other warranties implied by law or that, in case the machines failed to perform the function for which they were manufactured, the manufacturer would be relieved of all responsibility other than that expressly stated for replacement of parts by reason of defects in material and workmanship.

"The seller is bound to explain himself clearly respecting the extent of his obligations. Any obscure or ambiguous clause is construed against him. Accordingly, even if it be liberally construed that the manufacturer actually in-



Parties to a purchase contract may stipulate whatever terms they choose, limiting the buyer to a specific remedy.

CONTOUR TRENTWELD TUBING is furnished in ten basic classifications: Pressure Tubing, Mechanical Tubing, Aircraft Tubing, Heat Resistant Tubing, Ornamental Tubing, Sanitary Tubing, Beverage Tubing, Large Diameter Tubing, Shaped Tubing, and Formed Tubing.



TRENTWELD tubing is equal in strength and has more uniformity than tubing made by any other method of manufacture

Trent offers tubing in sizes ranging from $\frac{1}{8}$ " to 40" O.D. and in a wide range of grades. These include: Hastelloy,* Zirconium, Zircaloy, Titanium and 19-9-DL grades. All are made by an exclusive welding process—Contour Trentweld®—which virtually eliminates the bead. Furthermore, by cold working and annealing after welding, Trent makes the weld equal in strength and corrosion resistance to the parent metal.

To insure that Trentweld tubing

is of the highest quality attainable, a rigorous quality control program is carried out. Samples of each lot are tensile tested. Periodic tests — flattening, reverse bend, flare and flange, coil, and pressure — are conducted. Rigid corrosion tests are made on all lots intended for corrosive applications. When requested, a unique "single-wall" X-ray inspection is made as your final assurance of a sound, uniform product.

Why not take advantage of Trent

quality when you order stainless or high alloy tubing? For further information, write for the Trent tubing handbook, Trent Tube Company, East Troy, Wisconsin.

*Trademark of Haynes Stellite Co.



**TRENT
TUBE
COMPANY**

Subsidiary of Crucible Steel Company of America
GENERAL OFFICES: EAST TROY, WISCONSIN
MILLS: EAST TROY, WIS.; FULLERTON, CALIF.

tended to restrict its entire liability to the replacement of parts, it would still be responsible, as the alleged limitation in the contract does not plainly signify such an aim."

Case In Contrast

In contrast to this case are the circumstances surrounding the sale of a baler to purchasers in the state of Washington. It was stipulated in the purchase contract that: "The purchaser hereby acknowledges that all the terms and provisions of the purchaser's agreement with the seller are contained in this contract, that there is no other agreement collateral thereto, and that the seller has made no representation of express or implied warranty with respect to said property which is not set forth in this contract."

Here the court followed the law laid down in an earlier decision relating to an express refusal by the seller to make any warranty whatever. The law stated in that case by the court is:

"When the seller has expressly refused to give a warranty, no

warranty can be implied by law. On the other hand, a warranty will not be implied in conflict with the express terms of the agreement, it being well settled that the seller may by express provision exclude the implication or importation therein of any warranty on his part."

Warranty Too Limited

It does not follow however, that all the sins of the seller, both of commission and omission, may be thus washed clean by a contract provision waiving these warranties. It was stipulated by the parties to the sale in Kentucky of a machine for the manufacture of concrete blocks, that:

"There are no understandings, agreements, representations or warranties, express or implied, not specified herein respecting this order. The warranties, provisions, terms and conditions on the reverse side hereof are expressly made a part of this agreement."

In its decision of the action subsequently brought by the sellers, the court said this about these supplementary provisions:

"The provisions on the back of the order are special warranties and limit the seller's liability to defects in material and workmanship which may be developed under normal use and service, the obligation being limited to making good at its factory any defective parts.

"The rest of these provisions are that the seller makes no warranty except in certain specific but quite unimportant particulars. In short, this contract undertakes to eliminate and to avoid practically every sort of warranty except the very limited one stated. There is no remedy provided in case the machine proves to be worthless."

Here the machine did prove to be worthless and in its decision of the lawsuit brought by the purchasers to recover the money paid by them for this machine, the Kentucky court said:

"Anyone brought up to believe that for every wrong there is a remedy will pause before saying that the seller will escape all liability by merely putting in an order blank a statement to the effect that there is no assurance that the buyer will get a machine that will work.

"We have paused for a moment and have readily concluded that the avoidance of liability under such a circumstance is not permitted by law. Otherwise one would have no recourse when he got an automobile without a motor or wheels.

"Where there is a complete failure of a machine to accomplish the purpose for which it was designed, that is, to manufacture a merchantable product, it is much more than a breach of implied warranty of suitability or fitness for a particular purpose. It is not a merchantable article if it will not do what it was intended to do. There has been no delivery of that which was bought.

"Likewise to sell a man a machine for manufacturing a merchantable product that will not accomplish that purpose at all is a breach of the contract itself rather than a mere breach of warranty. If the machine is worthless for the purpose for which it is sold, there is a failure of consideration.

REFERENCES

- (1) Elgin Jewelry Co. v. Estes & Dozier, 80 S.E. 939, Georgia, May 11, 1905
- (2) Burntisland Shipbuilding Co. v. Barde Steel Products Corp., 278 Fed. 552, Delaware, February 15, 1922
- (3) Ivy H. Smith Co. v. Moretrench Corp., 253 Fed. 2d 688, Florida, April 9, 1958
- (4) Sharples Separator Co. v. Domestic Electric Refrigerator Corp., 61 Fed. 2d 499, Pennsylvania, October 3, 1932
- (5) Radalec, Inc., v. Automatic Firing Corp., 81 So. 2d 830, Louisiana, June 30, 1955
- (6) McDonald Credit Service v. Church, 301 Pac. 2d 1082, Washington, October 4, 1956
- (7) Luten v. Earles, 187 Pac. 349, Washington, January 20, 1920
- (8) Myers v. Land, 235 SW. 2d 988, Kentucky, October 27, 1950

For More Information Write No. 198
on Inquiry Card—Page 32—
PURCHASING

The Ludlow Line Protects Your Products Better

**This tape's built-in activator
saves shippers time, money**



Wetting agents *used* to be a problem. They were costly, messy, unreliable and a nuisance to prepare.

Ludlow's Comet Tape has solved this problem with a wetting agent that never fails built right into its trade-mark. As the tape passes over the brush, the Comet trade-mark activates the glue, assuring fast, effective sealing with a minimum of pressure. This exclusive Ludlow feature is available with both Comet Snake Tape* (reinforced) and Comet superstandard kraft gummed tape.

Comet Tape is typical of Ludlow's job-tailored packaging products. Look to Ludlow for greater protection, lower costs and faster packaging. We'll consider it a privilege to serve you.

*Rule 41 — approved for center-strip sealing.



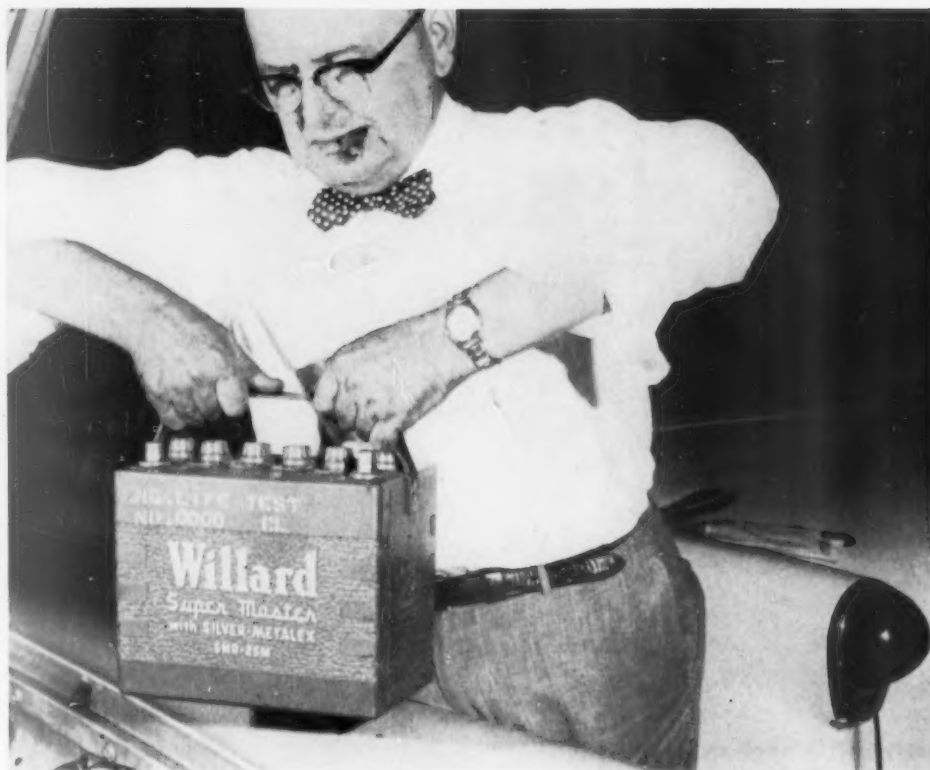
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Products and Ideas



Here's a typical application of a remarkable new bonding material, Eastman 910 Adhesive. Willard uses the adhesive to bond carrying straps to its automotive storage batteries. One drop of the adhesive applied to each end of the carrying strap is all that's needed to secure the straps.

Adhesive Gives Firm Bond To Wide Range of Materials

EASTMAN 910 Adhesive, a bonding material introduced as a laboratory development a year ago, is now being marketed commercially. The adhesives can be used to produce bonds between almost every combination of materials without requiring excessive pressure, catalysts, heat, solvent evaporation or long curing time.

The adhesive is already solving production problems for a wide range of products, including trophies, fountain pens, strain gages, and tools. The new adhesive has also made possible a

number of innovations in design which previously had not been considered practical.

For example, one manufacturer uses the adhesive to bond carrying straps to automotive storage batteries. The straps, which can be removed after installation, provide dealers and customers with a quick method of placing the battery in its compartment under the hood.

The material is known chemically as methyl 2-cyano-acrylate. It is a one-component system that requires no extensive surface

preparation and is easy to apply to small surfaces. Its cost, however, is well above the price of other adhesives. As a result, its use will be limited primarily to applications in which other adhesives cannot do the job. The new adhesive seems particularly well-suited to the following applications:

- (1) Where high-speed setting and curing is required.
- (2) To bond similar and dissimilar materials that cannot be held together by conventional adhesives.
- (3) For high strength bonds within the confines of small joining surfaces.
- (4) Where the savings in time or labor offset the high cost of the adhesive.

The adhesive is being sold by the Chemical Division of Eastman Chemical Products, 260 Madison Avenue, New York 16, N. Y.



CHANGE LIGHTING FIXTURES AS OFTEN AS YOU WISH WITHOUT COSTLY REWIRING

*Modern BullDog 20-amp
Universal Lighting Duct
permits fixture modernization at
substantial savings over pipe
and wire systems.*

You know what an expense it is to install new lighting fixtures, especially when you're saddled with a pipe and wire electrical system. Extensive and *expensive* rewiring is just the beginning. There are fixture locations to plan, new hangers to install . . . and usually long production shutdowns. Waste is great, too, since old wiring can never be reused.

It's just the opposite with 20-amp Universal Lighting Duct. The system is exceptionally easy to install—both feeds and supports lighting fixtures. Twist-in plugs attached to each fixture let you tap into power in seconds. No costly rewiring. No production shutdowns. The entire system can even be relocated without loss if the need ever arises.

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tioned at any spot along the duct, you can reposition them or add new ones whenever desired. In short, ULD will suit your lighting needs *exactly*, now and in the years to come.

When you modernize your lighting, modernize with BullDog Universal Lighting Duct. It is, *by far*, the most flexible and economical lighting system ever devised.

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BullDog Electric Products Company, Division of I-T-E Circuit Breaker Company,
Detroit 32, Mich. BullDog Export Division: 13 East 40th St., New York 16, N.Y.
In Canada: BullDog Electric Products Co. (Canada) Ltd., 80 Clayson Rd., Toronto 15, Ont.

For More Information Write No. 199 on Inquiry Card—Page 32

profiles in plastics

By **BARTO L. ATTIG**, Sales Manager
AMERICAN INSULATOR CORPORATION

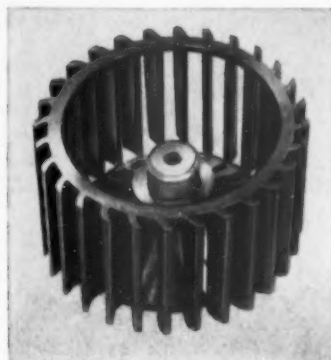
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Most of the men from AICO, the Sales Engineers who serve Aico customers, are recruited from the ranks of skilled technicians within our own organization. Because of their firsthand experience and work in Engineering, Die Making and actual molding of plastics, Aico Representatives are singularly qualified to provide you with the most economical solution to your molded plastics problems. Next time you seek fast, low-cost production of custom molded plastics . . . regardless of molding material, molding method required or quantities involved . . . Talk to A Man From AICO. Aico's unexcelled service, plus coordinated facilities for molding all types of plastics under one roof, saves you time, saves you money . . . eliminates split responsibilities.

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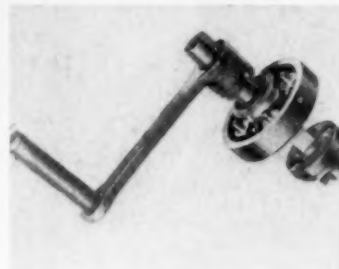
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Products

"Safety" Engine Crank



Safety crank eliminates the dangerous "kick-back" encountered when starting engines with a rope or crank. The crank has four cams which are spring-loaded against the shaft hub to allow the crank to turn in one direction only. When the engine "kicks-back," the cams jam against the hub, stopping the "kick-back" instantly. The crank also has a friction clutch to let the engine move in a reverse direction and prevent damage to the crankshaft or adaptor. Win-Well Manufacturing Co., 2010 South Utica, Tulsa, Oklahoma.

Write No. 18 on Inquiry Card—Page 32

Magnesium Sheet Alloy Doesn't Require Stress Relief After Welding

Magnesium sheet and plate alloy that does not require stress relief after welding has been developed. The alloy, ZE10A, contains zinc and rare earth metal as alloying constituents. Elimination of the need for stress relief after welding makes ZE10A advantageous in very large structures and in field repair operations where stress relief is difficult to apply. Missile shipping and storage containers, shipping containers for commercial bulk products, and tank-trailer bodies are possible applications.

Typical mechanical properties for ZE10A in the H24 temper (strain hardened, then partially annealed) include: tensile, 38,000 psi; tensile yield, 28,000 psi; compressive yield, 26,000 psi. The alloy also is furnished in the —0 temper (fully annealed). Dow Chemical Company, Midland, Mich.

Write No. 19 on Inquiry Card—Page 32
For More Information Write No. 200
—on Inquiry Card—Page 32

AICO'S Nook of Plastics Knowledge

LETTERING

Lettering to be molded on part should be on surfaces parallel to the parting line, sides of characters should be well tapered. Character depth of 1/64-inch is considered adequate . . . depth of 3/64-inch is maximum recommended. Confine lettering to flat surfaces, lettering on curved surfaces requires a split die or complicated die making. Additional information on lettering is fully covered in Aico's Plastics Designer's Handbook. Coupon will bring your FREE COPY.

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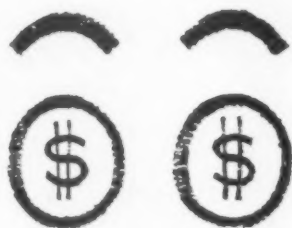
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PLASTICS DESIGNER'S HANDBOOK.

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February—Bought lower grade ammonia at a bargain price . . .



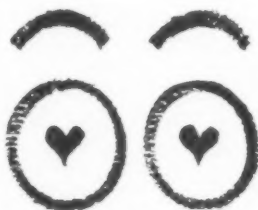
Later—Discoloration of finished parts apparent, rejects more frequent, pickling necessary . . .



Still later—Oil! Pressure regulators clogged, catalyst poisoned, incomplete dissociation . . .



Too late—Shut down metal treating line for repairs . . .



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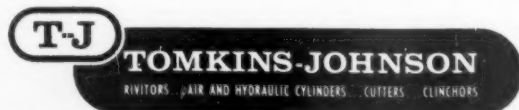


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With the introduction of the ALL NEW T-J Squair Head, Tomkins-Johnson now offers industry the most complete design range of air and hydraulic cylinders. Presently available in bore diameters from 1-½ to 8 inches, the T-J Squair Head is an interchangeable cylinder which produces maximum force and efficiency, with minimum pressures . . . and is also adaptable to the use of low pressure oil as the working medium. Write today to The Tomkins-Johnson Co., Jackson, Michigan, for Bulletin #SQ 10-58 and complete details.

CHECK THESE 10 POINTS OF T-J SUPERIORITY

1. One Piece Piston
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4. Cushion Adjusting Screw, Externally Adjustable
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6. Solid Steel Heads and Mounting Plates Standard all Models
7. Port Design Allows Minimum Pressure Drop on Inlet or Outlet
8. Chevron Type, Self-Adjusting Rod Packing
9. Piloted Packing Gland—Absolute Alignment
10. Piston Rod, Extra Strong—Polished and Chrome Plated for Efficiency and Protection



For More Information Write No. 202 on Inquiry Card—Page 32

Products

Compound Ends Bird Mess



Compound is guaranteed to end bird mess by stopping pigeons and other birds from roosting on roof ledges, eaves, sills or wherever it is properly applied, without injury to the birds. Called Bird-Free, the compound will not freeze in winter or run in the summer and requires no special tools for application. It is easily applied by anyone in strips 1" wide by ¼" deep, with a putty knife or similar spatula-like instrument.

Perfectly safe to human beings and birds, Bird-Free is of a special consistency, and contains a substance that birds do not like to stand on. It is backed by a money-back guarantee. Available in 5-pound containers, providing enough compound to cover an area approximately 250 linear feet in a strip 1" by ¼" deep. Bird-Free Company, Box W., Brookline 46, Mass.

Write No. 20 on Inquiry Card—Page 32

Self-Contained Solid-State Switch

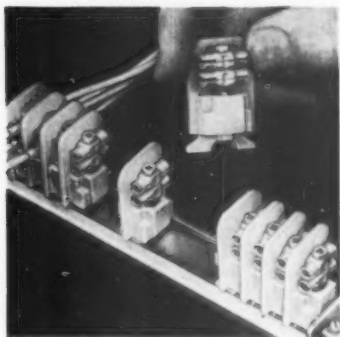


The Proxor is a solid-state switch triggered by metal in the proximity of a sensing coil. Al-

though only $\frac{3}{4}$ inch in diameter and 4 inches long, it is self-contained. The sensing coils, the bridge, transistor oscillator, two stage transistor switch, and a miniature printed circuit board are all encapsulated in the chrome-plated case. The potentiometer control at the rear of the instrument provides easy adjustment of the sensing zone, facilitating installation. Some outstanding features of the Proxor are: it can distinguish between magnetic and other metals; it will furnish voltage steps at ultra-low rates down to standstill; no electrical contact need be made between it and workpieces. Parametrics, Inc., Post Office Box 629, Costa Mesa, California.

Write No. 21 on Inquiry Card—Page 32

Versatile Terminal Blocks



Versatile and reliable terminal block accommodates wire sizes #22-#12. Modular construction allows individual modules to be snapped together or apart and then inserted onto a steel track and locked by end locks. The modules are made of Zytel 31, a nylon compound having extremely low water absorption characteristics. The tracks are available in any length up to 32 inches. 30 modules may be mounted per foot of track. Modules have either 2 or 4-tier spring-loaded plated sockets which may be set for quick-disconnect for rapid ring-out, bussing, or circuit changes. A twist of a screwdriver transforms the quick-disconnect into a permanent connection. These spring-loaded sockets exert continuous and uniform pressure in either position. Burndy Corp., Norwalk, Conn.

Write No. 22 on Inquiry Card—Page 32
JANUARY 5, 1959



Users of
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1. **MASS PRODUCTION ECONOMY**—Large or small, you get the benefits of high production rates and big volume output at Fairfield—where fine gears are produced to meet your specifications **EFFICIENTLY, ECONOMICALLY!**
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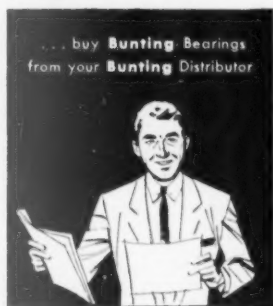
CAST OR SINTERED BRONZE

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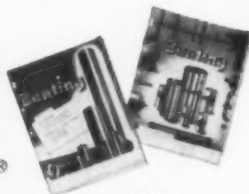
Stock sizes of Bunting Cast Bronze and Sintered Bronze Bearings and Bars are available everywhere in America. Every one is a precision product of scientifically exact manufacturing methods, meeting on every point the highest standards of quality as defined by modern mechanical engineering and metallurgy.



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Ask for
Catalog No. 58—Cast Bronze and Sintered
Bronze Bearings and Bars
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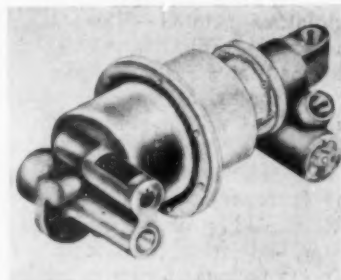
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THE BUNTING BRASS AND BRONZE COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

For More Information Write No. 204 on Inquiry Card—Page 32

Products

Pumps Without Electric Drive



Self-contained, lightweight reciprocating pumps require no electric drive. They are powered by pneumatic or hydraulic pressure sources and incorporate means for demand-responsive flow control and automatic pressure regulation of gases and liquids. Typical applications include pressurization of electronic equipment and hydraulic reservoirs, windshield de-icing systems, and hydraulic system leakage return. Waldorf Instrument Company, Division of F. C. Huyck & Sons, Wolf Hill Road, Huntington Station, L.I., New York.

Write No. 23 on Inquiry Card—Page 32

Portable Loader



Portable conveyor for loading, stacking and piling boxes, packages, cases and sacks. It is supplied with wheel-mounted support ahead of gear-motor or behind gearmotor at the end of the conveyor. Bed lengths are 10' and 15' with either 15° or 25° angle of incline. Net lifts are 2' 9", 4', 4' 6" and 6' 7". Three-ply rough-top rubber belt is furnished in 12" and 18" widths. Forward-reverse-stop pushbutton is mounted on the conveyor. Conveyor Specialty Co., Inc., North Quincy, Mass.

Write No. 24 on Inquiry Card—Page 32

For More Information Write No. 205
on Inquiry Card—Page 32→

PURCHASING

Announcing A NEW YALE PRODUCT FOR BOOSTING PROFITS



NEW YALE AIR HOISTS SPELL DOUBLE SAFETY

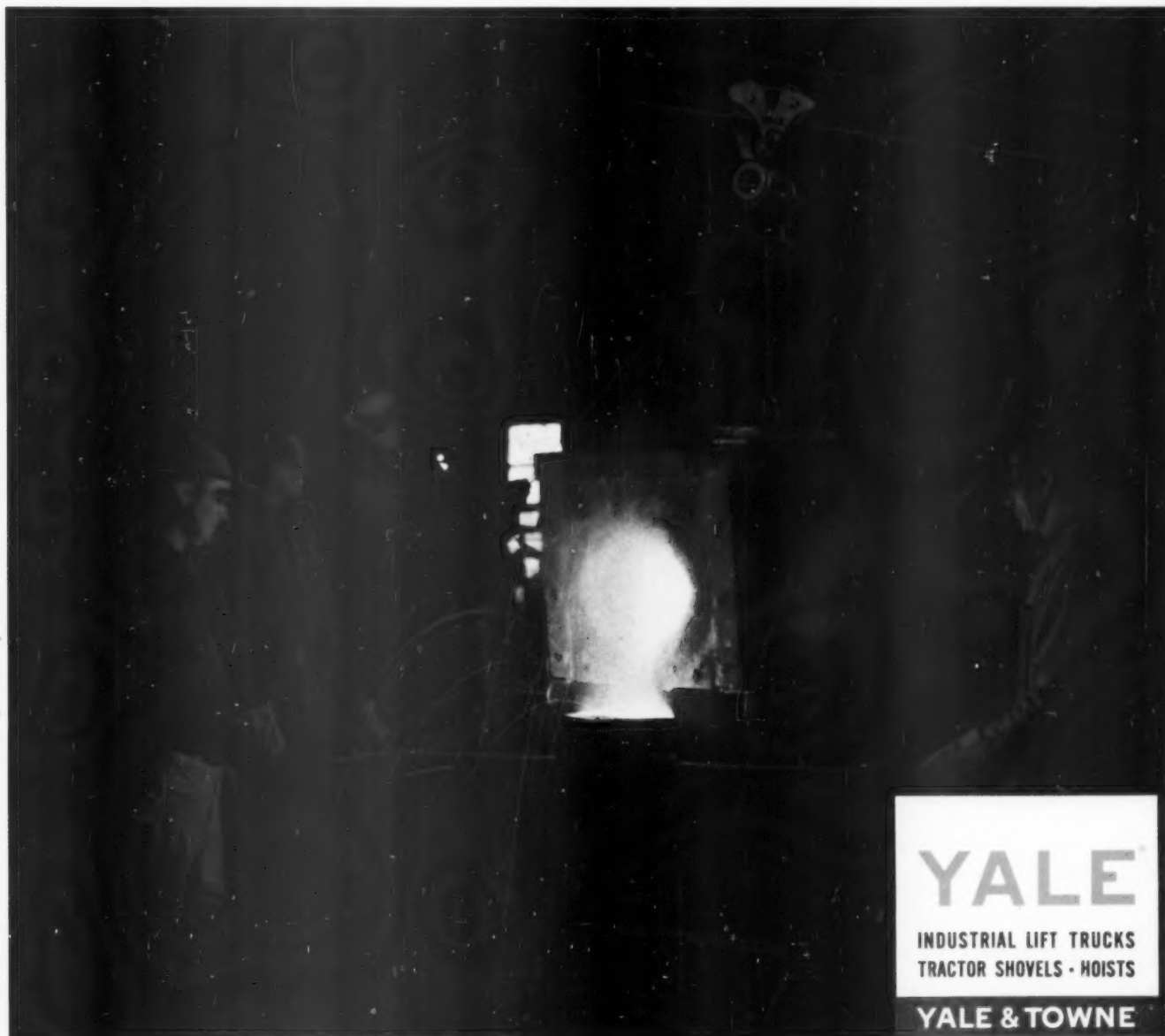
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Where your overhead handling jobs must be performed in a hazardous atmosphere, the new Yale Air Hoists provide the margin of safety you need. Air motor is explosion-proof — will not overheat. Constant variable speed-control allows smooth lifting and lowering — decreases danger of spillage or product damage. These light, compact hoists provide almost silent operation.

Maintenance is minimized due to fewer moving parts — a real economy feature.

Capacities, $\frac{1}{2}$ and 1 ton — hook or trolley models — roller or link chain — pendent or pull-cable control. For complete information on the Yale Air Hoist — newest in Yale's complete line of hand and electric hoists $\frac{1}{2}$ to 40 tons capacity — contact your Yale distributor listed under "hoists" in the yellow pages of your phone book. Or write for brochure #5145 to The Yale & Towne Manufacturing Co., Yale Materials Handling Division, Dept. AH1H, Philadelphia 15, Pa.



YALE

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TRACTOR SHOVELS • HOISTS

YALE & TOWNE

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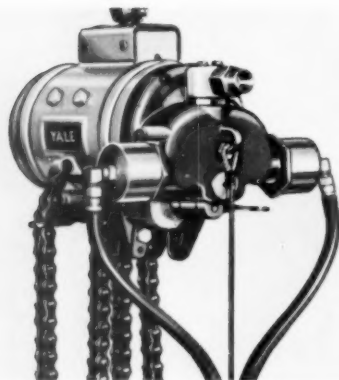


NEW YALE AIR HOISTS GIVE YOU THESE ADVANCED FEATURES

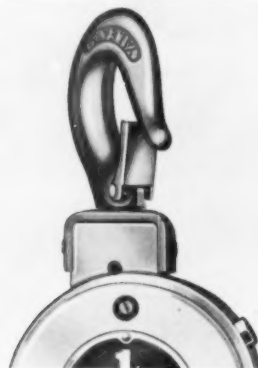
- Automatic brake locks when power is off
- Explosion-proof motor cannot overheat
- Motor cannot burn out due to overloads or high duty cycle operation
- Lightweight with maximum strength
- Fast lifting speeds
- Variable speed control
- Instant acting heavy duty brake
- Fewer moving parts to minimize maintenance

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Yale makes available to industry the complete lines of industrial lift trucks, tractor shovels and hoisting equipment that lower production costs — speed distribution — mean greater profit margins because you get faster delivery of your products into your market — can price your product competitively for increased sales.



ROLLER CHAIN hook type hoist with lever pendent control. Available with safety catch bucket.



YALE SAFETY LATCH HOOK—viewed at load brake end of hoist showing single screw for brake adjustment which can be made without removing cover. Limit switch below the two air connections also serves for conversion to pull cable control.



NEW SAFETY LEVER pendent control operates by fingertip—saves time and effort.

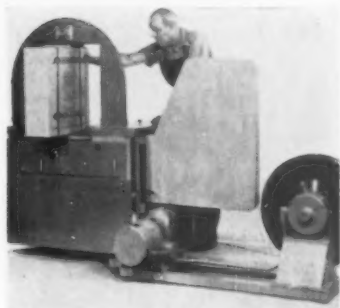
YALE[®]

INDUSTRIAL LIFT TRUCKS
TRACTOR SHOVELS • HOISTS

YALE & TOWNE

Products

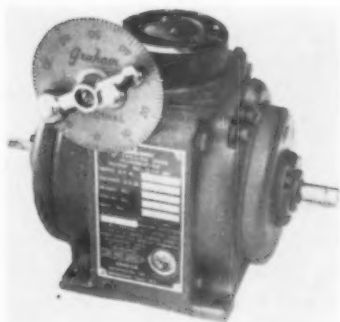
Automatic Strapping Machine



Model 2700 fully automatic flat steel strapping machine for the closure of corrugated cartons, fiber cartons and wooden cases has these features: Up to 17 ties per minute. Automatically compensates tension for package size variations. Rugged, durable construction. Built in air lubrication system. Minimum capacity, 4 inch high by 8 inch wide. Maximum capacity, 22 inch high by 20 inch wide or 15 inch high by 26 inch wide. A. J. Gerrard Co., 1950 Hawthorne Avenue, Melrose Park, Ill.

Write No. 25 on Inquiry Card—Page 32

Speed Settings: 1 in 4,000



Micrometer dial permits speed setting to one part in four thousand. An "anti-backlash" control linkage permits accuracies of speed holding and reset of the same order. All speeds from any desired maximum to zero—and reverse—are provided with speed adjustable with the transmission running or stationary. Graham Transmissions, Inc., Menomonee Falls, Wis.

Write No. 26 on Inquiry Card—Page 32

JANUARY 5, 1959



Your
plant
is in
this
picture

IT might as well be YOUR plant, for in it, Kirk & Blum can bring your drawings to life . . . with substantial savings for you in costs and capital investments.

Kirk & Blum offers complete facilities for the fabrication of sheet and plate to 1/2" thickness—and light structurals. We specialize in aluminum, monel, stainless and other alloy fabrication.

In the modern 170,000 sq. ft. Kirk & Blum plant is to be found the latest metalworking equipment available, operated by skilled sheet metal craftsmen. Overhead cranes, to 25 ton capacity, serve entire assembly areas and interior rail siding. A new warehouse contains extensive inventories of materials. Coordinated for speed, versatility and accuracy, these facilities assure successful and economical completion of your products.

THE KIRK & BLUM MFG. CO.

3125 Forrer Street
Cincinnati 9, Ohio
ESTABLISHED 1907

KIRK & BLUM
SHEET METAL FABRICATION

For More Information Write No. 206 on Inquiry Card—Page 32

ANOTHER IN A SERIES
OF MOTOR FACTS
FROM ALL INDUSTRIES



"Roughest duty we have ever seen motors endure"

reports Marquette Iron Mining Co.
of the Westinghouse ***Life-Line A*** motors
in its Eagle Mills Pelletizing Plant

Operating continuously, 24 hours per day, dependable Westinghouse Life-Line® "A" motors drive a network of fans and conveyors at the Eagle Mills Pelletizing Plant of Marquette Iron Mining Co., Ishpeming, Michigan.

Some of these motors are located directly above a sintering machine where ambient temperatures often exceed 200° F and the motor is subjected to deposits of finely divided iron ore. Under these conditions, not a single motor breakdown or failure has occurred during 11 months of service.

Says Mr. Ed Gagnon, plant electrician, "Our Westinghouse motors have given us complete reliability on the roughest tests we have ever seen a motor endure."

For specific information about the ways your operation can benefit from the improved performance, longer life and reduced maintenance offered by the dependable Life-Line "A," contact your nearby Westinghouse sales engineer. Or write to Westinghouse Electric Corporation, P.O. Box 868, 3 Gateway Center, Pittsburgh 30, Pennsylvania.

J-22077

YOU CAN BE **SURE**...IF IT'S
Westinghouse



Deposits of powdered iron ore are no problem to this 2-hp Life-Line "A" motor driving conveyor which carries powdered iron ore to the balling disc where $\frac{1}{2}$ " pellets are formed. Presealed, prelubricated Life-Line "A" bearings keep dirt and other material out.

This can't be FIREBAN...



New Taylor FIREBAN 321 Laminated Plastic is self-extinguishing in only 3 seconds

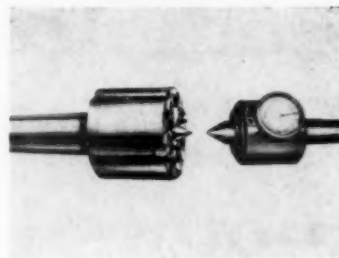
Electrical faults in appliances, TV sets, radios, motors and other electrical devices frequently lead to fires—and these fires lead to complete destruction of the equipment, sometimes extensive damage to the facilities surrounding it. Taylor FIREBAN 321 is designed to retard fire. Self-extinguishing in only 3 seconds—it is an effective barrier against the spread of flame. In addition, this flame-retardant laminated plastic has excellent moisture resistance, excellent electrical resistance after exposure to high humidity, and good mechanical properties; also offers low dielectric losses. These properties help prevent the electrical faults that lead to fires. Write TAYLOR FIBRE CO., Norristown 36, Pa., for complete details.

Taylor

LAMINATED PLASTICS VULCANIZED FIBRE
For More Information Write No. 208 on Inquiry Card—Page 32

Products

New Centers Improve Work Holding Efficiency



Combination of driving center and live center provides a 100% effective method of holding material between centers for turning and grinding. Hydraulically controlled driving pins permit effective grip on material and balances surface irregularities up to $\frac{1}{4}$ ". The center point of the driving center is spring-loaded independent of the hydraulic system to provide highest accuracy of concentricity. Interchangeable driving pins in eight different sizes permit the clamping of material from 1" to 10" in diameter with but one driving center. Spring-loaded live center has a built-in pressure gage to provide constant visual indication of the exact amount of axial load on the center. Use of this built-in gage on the compensator live center prevents the live center from ever being overloaded as it compensates for heat expansion and axial thrust of the driving center. R. B. Tool Co., Inc., 17 Roff Avenue, Palisades Park, N.J.

Write No. 27 on Inquiry Card—Page 32



"We can't afford it."

LOOK for serviceability in towel cabinets



NEVER "OUT-OF-ORDER"

WESTROLL CABINETS offer a trouble-free way to reduce towel costs up to 40%. They're strong, jam-proof, tamper-proof. A patented worm and gear drive mechanism never requires adjustment or repair. Nothing gets out of working order. As proven by many years' use. Across the U. S. and Canada.

WESTROLL CABINETS are loaned free of charge to purchasers of soft, absorbent WESTROLL TOWELS. They control, but never limit the use of towels. Without realizing it, users take far less than from other types of cabinets.

WESTROLL CABINETS simplify washroom maintenance as

they lower washroom costs. They reduce litter. Promote neatness. Load easily. Need refilling less frequently.

We'd be glad to demonstrate the unmatched qualities and economies of WESTROLL CABINETS and TOWELS in your office. Just telephone your nearby West office. Or mail the coupon to our Long Island City headquarters, Dept. 15.

- ☐ Please send free folder on reducing towel costs.
- ☐ Have a Representative phone for an appointment.

Name _____

Position _____

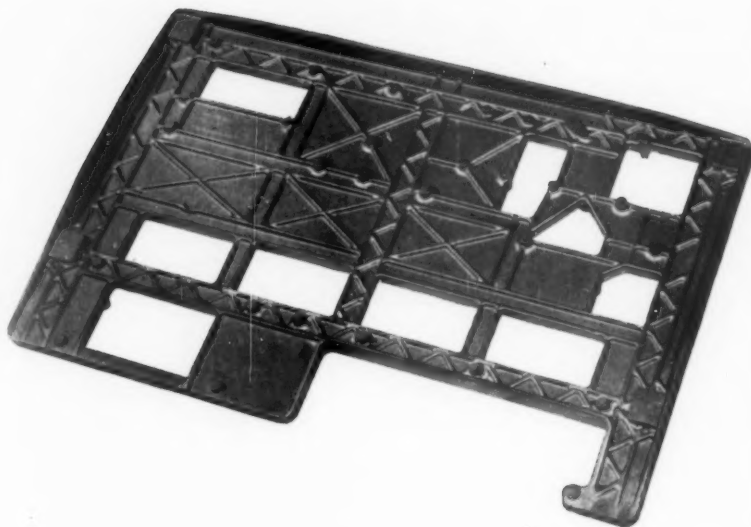
PROGRAMS AND SPECIALTIES
FOR PROTECTIVE SANITATION
AND PREVENTIVE MAINTENANCE



WEST DISINFECTING DIVISION

WEST CHEMICAL PRODUCTS INC.
42-16 West Street, Long Island City 1, New York
Branches in principal cities
CANADA: 5621-23 Casgrain Avenue, Montreal

For More Information Write No. 209 on Inquiry Card—Page 32



EXCELLENT BASE FOR PROFITS

This ninety-six pound casting was made for the National Cash Register Co. of Nodulite®, Hamilton Foundry's ductile iron. The casting forms the base for the new Post-Tronic Accounting Machine. It measures 37½" by 23½" with sections varying from ¼" to 1½". Ductile iron was chosen for this part because of its ductility, dimensional stability, rigidity, and machinability.

Sharp pencil buyers know that the *ultimate* cost of a casting rather than the purchase price is most important to the cost of the end product. Dimensional accuracy, uniform machinability, fine surface finish, low rejects and delivery of orders on schedule result in castings at lowest ultimate cost and insure your reputation for product quality.

When new and unusual design problems arise in the selection of metal and the casting of parts, you will find that the skill and integrity of your foundry is your best insurance that specifications—and delivery schedules—will be met.

GRAY IRON • ALLOYED IRON • MEEHANITE® • DUCTILE (NODULAR) IRON • NI-RESIST • DUCTILE NI-RESIST • NI-HARD



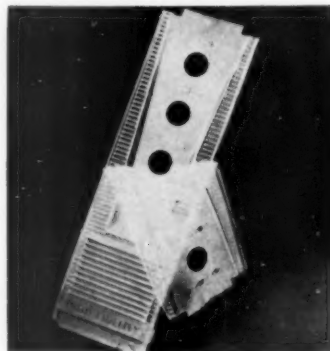
HAMILTON FOUNDRY

The Hamilton Foundry & Machine Co., 1551 Lincoln Ave., Hamilton, Ohio • TW 5-7491

For More Information Write No. 210 on Inquiry Card—Page 32

Products

Coating Guards Metal Against Corrosion and Marring



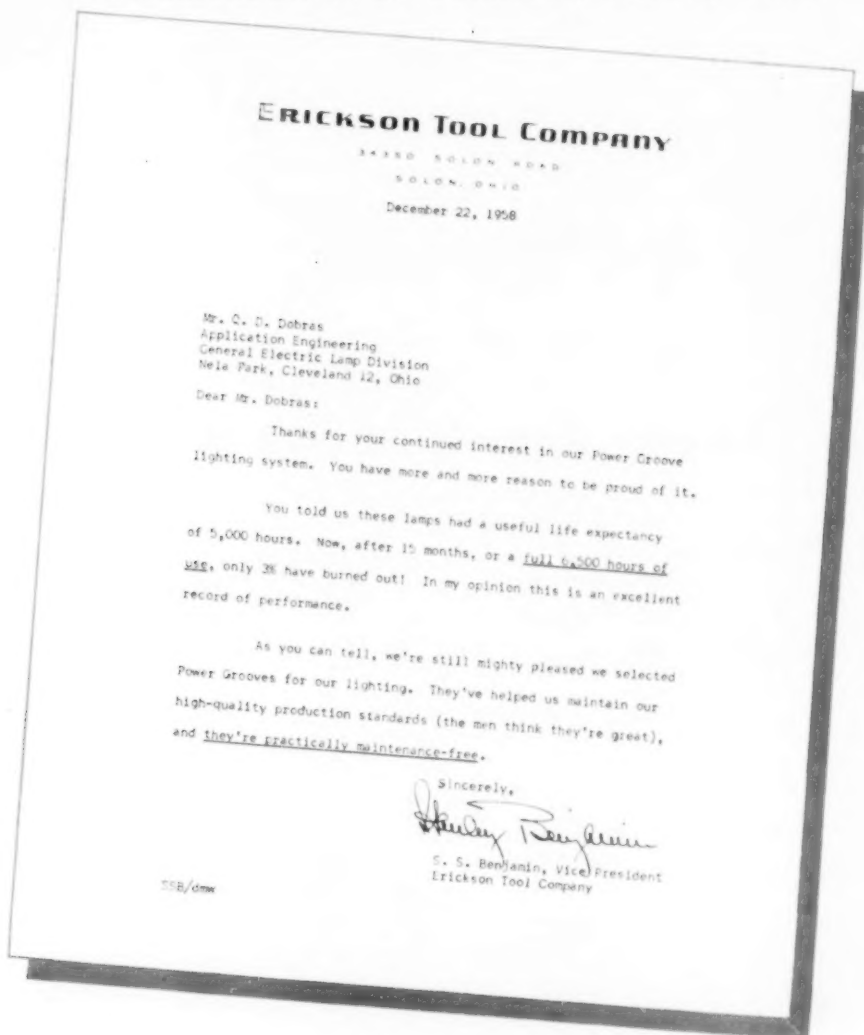
The film formed by "Plastisol Clear" safeguards metal against corrosion and marring during metal forming processes. The film will remain in place during even highly stressed drawing and punching operations; yet, it may be easily removed afterwards. The material may be left on metal parts for removal by the ultimate user. This would eliminate any danger of marring during transportation. Finely machined parts such as gears can be protected against humidity and other hazards in transportation and storage. Removal of the protective film is simply a matter of peeling it off after it has served its purpose.

The coating may be applied by rolling, spraying, brushing, dipping, flow coating. After application, the coated metal is heated at 350°F to 375°F. for two to three minutes. This brief baking is necessary since the film will not air dry. Film thicknesses may range from ½ mil to 10 mils or more under normal application procedures. Abrasion and chemical resistance are excellent, and electrical resistance is 500 volts per mil of film thickness. Calculated coverage is 1600 square feet per gallon per mil without allowing for possible losses in application operations. Thus, a gallon will provide 800 square feet of coverage at 2 mils, and 400 square feet at 4 mils. Industrial Division, The Sherwin-Williams Co., Cleveland 1, Ohio.

Write No. 28 on Inquiry Card—Page 32

"97% of our General Electric Power Groove Lamps are still going strong after 6500 hours!"

SAYS ERICKSON TOOL COMPANY, SOLON, OHIO



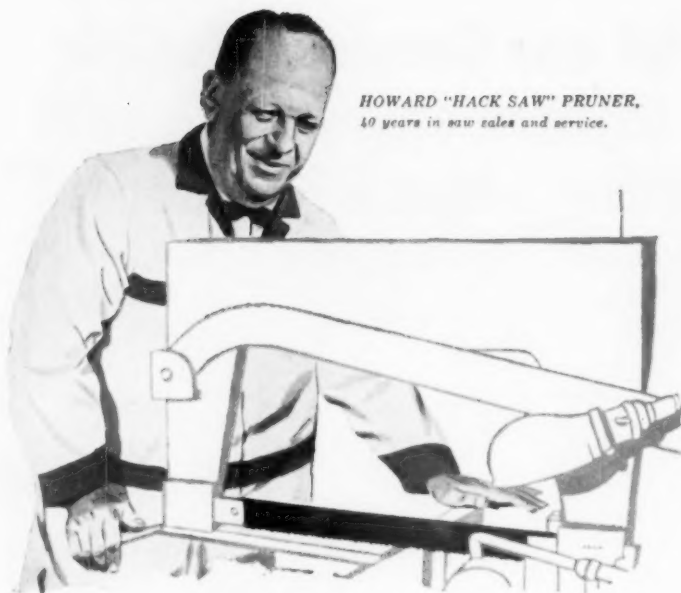
G-E POWER GROOVES give nearly twice as much light as high output fluorescents— $2\frac{1}{2}$ times as much as slimlines. You can get more light per fixture, with fewer parts to maintain, and save 5% to 20% on original investment.

FREE! NEW 24-PAGE BOOK entitled "21 Industrial Lighting Problems Solved With Power Grooves". This illustrated book gives you the whole story on G-E Power Groove Lamp design—plus specific details on how to get the highest, most economical lighting levels. For your copy, write: General Electric Co., Large Lamp Dept. C-901, Nela Park, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

For More Information Write No. 211 on Inquiry Card—Page 32



HOWARD "HACK SAW" PRUNER,
40 years in saw sales and service.

PRODUCTION SPEED AND
ACCURATE CUTTING WITH

LENOX POWER HACK SAW BLADES

You can count on increased production with LENOX power blades featuring long-wearing teeth and straight cutting performance. LENOX power blades are heat treated and toughened under modern electronic controls to guarantee strong, uniform hardness.

For a better blade . . . better made . . . you can always depend on LENOX.

OPERATIONAL STUDY? An experienced, technically-trained Lenox factory engineer is available to analyze your power hack saw operation . . . and possibly show you how to save time and money. Write or call today for immediate service. No obligation, of course.



HACKMASTER TYPE High speed welded edge, shatterproof.

MO-SPEED TYPE High speed steel, all-hard.

LENOX
THE TOOLS OF THE MODERN BOX

AMERICAN SAW & MFG. COMPANY
SPRINGFIELD, MASSACHUSETTS • U.S.A.

For More Information Write No. 212 on Inquiry Card—Page 32

Products

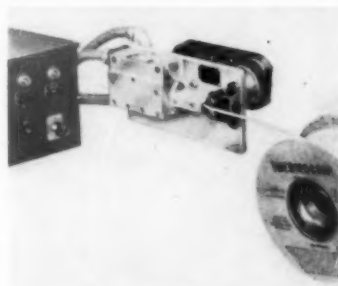
Precoated Flaps for Corrugated Boxes



Corrugated boxes can be assembled and sealed by merely pressing precoated flaps together. The self-stick boxes are processed on machinery that applies and dries a coating with liquid latex base. When matching strips of the coating, called Stik-Kwik, make contact, a strong cohesive bond is formed. The pressure-sensitive type of closure takes the place of conventional stitching, glueing or taping. Stored flat until needed, the boxes are quickly set up and sealed by the same workers who fill them. This avoids separate box assembly beforehand, which often requires closure apparatus, extra space for boxes and equipment and extra handling. Moreover, it can make closure equipment at the packing line unnecessary. Stone Container Corp., 4200 West 42nd Place, Chicago, Ill.

Write No. 29 on Inquiry Card—Page 32

Hot Melt Adhesive Dispenser



A hot melt adhesive applicator is designed to feed, melt, and apply cord-like adhesive. The

Thermogrip Applicator, Model CW, comes complete with electrical heat controls, and can be incorporated into machines where gluing, spotting, or applying is required. It uses a transfer wheel method of applying the molten adhesive to individual passing objects. It functions equally well on its side or upside down, thus making the fast-setting hot melt adhesive adaptable to a greater variety of uses. Typical applications include package ends, tabs, or sides, tipons and non package operations where quick setting automatic glue assembly is desired. United Shoe Machinery Corp., 140 Federal Street, Boston 7, Mass.

Write No. 30 on Inquiry Card—Page 32

Tubular Heating Element



A tubular heating element is suitable for a wide range of applications: heat guns, hair dryers, space heaters, hot food vendors, photo print dryers and other products where air is to be heated while flowing through a tube or nozzle. The unit illustrated was made for use in an electric hand dryer. The heating element is threaded through circular-shaped grooves on the inside of a Steatite tube. This provides for an unobstructed flow of air and for a high increase in heating efficiency, since the heat is reflected from the inner walls to the center of the tube. The porosity-controlled Steatite tube provides further efficiency because of its low moisture absorption, which reduces current leakage to a minimum. Tuttle Electric Products, Inc., Kirkland, Ill.

Write No. 31 on Inquiry Card—Page 32

JANUARY 5, 1959

Purchasing Profiles

"How do we buy locally for a railroad?"



"From the Yellow Pages of each city along our railroad's route."

says Arthur W. Tompkins, General Purchasing Agent for Western Maryland Railway Co., Baltimore, Maryland.

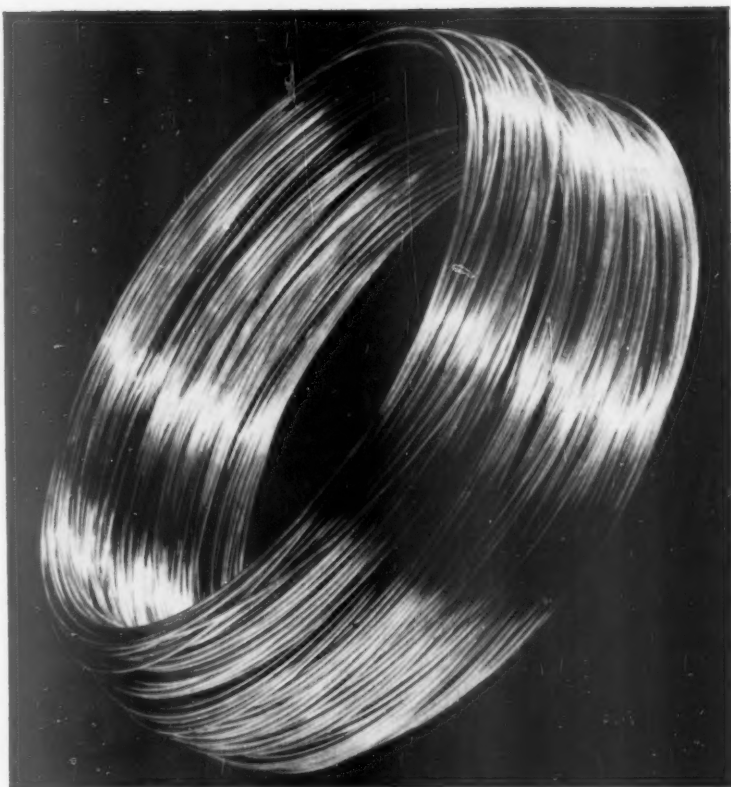
"When you need something fast in a business that's spread over a large area, you have to do on-the-spot purchasing. That's why we rely on the Yellow Pages. In the office in Baltimore, we keep classified telephone directories from each city along the route of the railroad. And we refer to them on an average of ten times a week."

To buy *what* you need *where* it's needed, always refer to the appropriate local Yellow Pages Directory. Because you *find it fast* in the Yellow Pages, you can *get it fast*!



Western Maryland Railway shops in the Yellow Pages, America's buying guide for over 60 years!

For More Information Write No. 213 on Inquiry Card—Page 32



from CONTINENTAL
a lustrous new
TINNED WIRE

Here's smoothness and luster you rarely get in tinned wire. Continental's special technique makes possible an enduring, uniformly bright finish . . . a wire so bright that it can replace plated wire on many products. It retains its brightness for long periods of time in normal use. Continental tinned wire meets your needs for quality and workability and is available in almost any temper and analysis in medium low carbon and low carbon steels.

FINE—16 gauge through 30 gauge, in 8" diameter coils

COARSE—20 gauge through $\frac{3}{16}$ ", in 16" and 22" diameter coils.

For smooth beauty and high degree of perfection in wire, you will want to investigate Continental Tinned Wire. Write or Telephone—today; or return coupon below.

FILL OUT AND RETURN COUPON TODAY

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

☐ Send Complete Details

☐ Have Salesman Call

**CONTINENTAL STEEL
CORPORATION • KOKOMO, INDIANA**

PRODUCERS OF: Manufacturer's Wire in many sizes, tempers, and finishes, including Galvanized, KOKOTE, Flame Sealed, Coppered, Tinned, Annealed, Liquor-Finished, Bright and special shaped wire. Also Welded Wire Reinforcing and Galvanized Fabric, Nails, Continental Chain Link Fence, and other products

For More Information Write No. 214 on Inquiry Card—Page 32

Products

**Lighting Fixtures for
High Ceilings**



Lighting fixtures (designed for interior lighting of buildings having high ceilings, such as shops with overhead craneways) are light in weight, highly efficient, and easy to assemble and wire. These high-bay units are available for 300-1500 watt incandescent or 400-watt mercury lamps. Fixtures may be ordered with separable or single piece head, and with wide angle reflector suitable for low and medium mounting heights, or with concentrating reflector for high mounting and narrow areas. Crouse-Hinds Company, Syracuse 1, New York.

Write No. 32 on Inquiry Card—Page 32

**Split Bearing Eliminates
Shaft Removal**

Split bearing design permits bearing replacement savings of at least 75% by eliminating the need for costly shaft removal. For intermediate - position installation and replacement on shafts commonly used in many types of units such as the one pictured.

Permits easy bearing replacement without repositioning or disassembling the unit. Permits trouble-free replacement and secure closure of the bearing at any point along the shaft in a fraction of the time required for conventional bearings. Available for all standard shafts, sizes 1 $\frac{3}{16}$ " through 3 $\frac{3}{16}$ ". Randall Graphite Bearings, Inc., Lima, Ohio.

Write No. 33 on Inquiry Card—Page 32

PURCHASING



Don't Tie Yourself Up In Excess Tape

Save Money with Dutch Brand's new Plastic Electrical Tape in 44-ft. Rolls

Dutch Brand's new 44-ft. roll of Plastic Electrical Tape costs no more per foot than a 66-ft. roll. To you, this means less funds sunk in inventory. It also means you are *not* tied up in excess tape footage that invites waste and pilfering.

Dutch Brand Plastic Electrical Tape is the easy, *better* way to do scores of electrical maintenance jobs. It's thin, strong, flexible . . . provides a dielectric strength of 9,000 volts. Also provides unusual resistance to acids, alkalis, oils, solvents, fungus, bacteria, and gases. Made to highest in-

dustrial standards. Available in 20'—44'—66' rolls. Order Dutch Brand Plastic Electrical Tape from your supplier today.

WRITE FOR NEW BOOKLET!

Looking for new ideas on tape as a money-and-time-saver? Ask for "Big Four in Electrical Tapes."

Johns-Manville Dutch Brand Division, 7800 South Woodlawn Avenue Chicago 19, Illinois



JOHNS-MANVILLE



Office Equipment and Supplies

Sizing Up a P.A.'s Skill In Delegating

"HOW DOES one get ahead in this firm?" Hard question for a P.A. to answer? It doesn't have to be.

Many skills are needed to get ahead in any firm; but in many surveys, delegation of authority is listed among the top 25% of the skills that make for executive success.

Suppose you are in a supervisory position with a large firm. The odds are high that your boss has been instructed to size up the way you delegate authority. He does this informally, but he does it continually.

He is keeping an eye on other points, of course, because delegation is just one of the qualities considered important.

In many firms, the salaried employees are formally rated once a year on the effectiveness of their delegating ability. These ratings are usually discussed with the man involved. And they are almost invariably a crucial factor when the time comes to decide who gets the promotion. Thus it often happens that the long-serv-

ice man who is weak in this area can find himself left behind.

This emphasis on delegating is rather new, but it is certainly understandable. One man may not have enough eyes and arms to take proper care of all the details in a single department. He must delegate in order to operate effectively.

Small business, also, is caught in the mesh. A firm can be small in number of people employed, but still have practically as many details to look after as its giant competitors.

However, it is the larger firms which are making the greatest strides in delegating authority. Since World War II, there has been a rapid increase in the number of firms which have set up departments for management development and executive training. Delegating is one of the skills these departments hammer away at. It could be either a young trainee on his first job or a long-time employee the firm wishes to upgrade.

It's easy to see why delegating

skill often tips the balance in promotions. Each step up the ladder adds to the scope of duties for which the executive is responsible. As he advances, he has to see that more things are done and he finds it is not humanly possible to do them all single-handedly.

The person who wants to get ahead, unless he is a rare, natural-born delegator, should do some soul-searching about how he stacks up in delegating skill. This is the usual first step in self-development, and the step where ratings may help as well as embarrass. The help can be permanent, while the embarrassment might be only temporary.

Ability to delegate cannot be measured accurately. The ratings probably give only a rough approximation. Then too, their usefulness does not depend as much on great accuracy as upon the effect they have in making people delegation-minded. This effect is produced in both the trainer and trainee, and it is considered wholesome for both.

For example, one large chemical firm is satisfied with the simple report that a man's skill in delegating is a strong factor or a hindering factor in his qualifications for the next job ahead.

Surveys show that the big weakness, with both individuals and firms, is usually under-delegating. Of course, over-delegating does sometimes occur. As with most medicines, a normal dose helps, but an overdose can produce harmful results.

People who like to take things easy are susceptible to delegating too much. Also, those who like to show their importance are inclined to surround themselves with unneeded assistants, to whom they delegate too much.

These possibilities of over-delegating or under-delegating show why adequate delegating remains an art. It can not be picked up from a book read in off hours. Continual practice, through stages of progressively more and more delegation, is essential to get into the swing.

ORGANIZING ABILITY

Ability to arrange for the accomplishment of job responsibility in an orderly, efficient manner.

Check ONE of the following:

- ☐ Poorly organized. Tries to do everything himself.
- ☐ Small organized approach to delegation. Overburdens self with details.
- ☐ Some attempt at delegation on normal, routine affairs. Needs guidance on major changes.
- ☐ Successful in apportioning work load effectively. Needs little guidance in co-ordinating major efforts.
- ☐ Delegates authority effectively. Recognizes broad objectives clearly and arranges for most effective accomplishment.

Announcing...

the newest idea in Office Pens

...since the Quill!

THE NEW

Scripto

S.P.O.* BALL PEN

*SPECIALIZED PLANT AND OFFICE

At last! A refillable ball pen designed for business! Full-size refills at less than 10¢ each in quantity!

Developed after years of research, the new Scripto T010 has proved in-use savings up to 66% of the cost of old-fashioned writing instruments. The new Scripto S.P.O.* Pen is specially designed for foolproof, economical use.

*Specialized Plant and Office

Scripto

Includes Many Completely New Features:

- Special non-roll taper top.
- Full-size refills cost less than 10¢ each in dozen lots.
- Choice of points: general office, stenographic, accounting, etc.
- Completely leakproof and refillable.
- Rounded writing grip designed for writing comfort.
- Color of barrel identifies color of ink.

A COMPLETE SERVICE FOR OFFICE AND FACTORY WITH ALL THESE ACCESSORIES:

1. Economy priced desk base
2. Memo pad and pen holder
3. Retractable model with clip for away-from-desk workers.

SPECIALLY LOW-PRICED FOR OFFICE USE—ASK YOUR STATIONER FOR QUOTATIONS.

Now serves industry with the best in writing...at any price!

Scripto, Inc., Atlanta, Ga. — Scripto of Canada, Ltd., Toronto, Canada — Scripto Products available in Canada at slightly higher prices.

For More Information Write No. 216 on Inquiry Card—Page 32

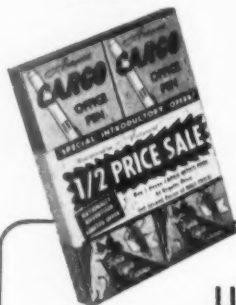
**Writes 3 times
longer than
ordinary
office pens...
SAVE UP
TO $2\frac{2}{3}$...**

Autopoint
CARGO.
OFFICE PEN

If you are *not* using the smooth writing Cargo, you are buying 3 times as many office pens as you actually need. Only Cargo offers triple the writing mileage of other office pens... regardless. Only Cargo offers a barrel full of ink... and ink supply is always visible.

Your stationer will show you how to save two-thirds on your pen purchases. He offers a complete selection of inks and points for all office needs... including steno and auditor points and reproducing ink.

only **49¢** most models



**LIMITED
INTRODUCTORY OFFER!**

Purchase one dozen... Get
second dozen at **HALF PRICE!**

ASK YOUR STATIONER

For further information, write Dept. 36

Autopoint Co., Division of Cory Corp.
3200 W. Peterson Ave., Chicago 45, Illinois

For More Information Write No. 217
on Inquiry Card—Page 32

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Office Equipment



Anco Wood Specialties, Inc., 71-08 80th Street, Glendale, L.I. N.Y. has designed and built an easel to meet the ever-increasing demand for this type of product. Called the No. 350 Presentation Easel, some of the outstanding features are: a 28" x 36" washable chalkboard; two 28" chart trays (the second for storage); and height adjustment from 44" to 80".

Write No. 34 on Inquiry Card—Page 32

A new buyer's guide for the purchasers of office supplies has been published by Eberhard Faber Pencil Company, Crestwood, Wilkes-Barre, Pa. In full color, the guide depicts and describes the most useful everyday

items of the office. It has five categories: general office, secretarial, engineers and draftsmen, production and shipping, and the art department. Copies are available upon request to the company.

Write No. 35 on Inquiry Card—Page 32



An electric adding machine, designed to fit into the most modern office and incorporating new operating advantages has been introduced by Remington Rand Division of Sperry Rand Corporation. The same key permits a choice of automatic totals or sub-totals. Totals and sub-totals are automatically printed in red; negative totals also appear in red, and are instantly identified with the automatic "CR" symbol.

Write No. 36 on Inquiry Card—Page 32

Completely portable! Place it anywhere! Move it from desk to desk. All metal construction. Stronger cutters... sharper points. Available in Green, Blue, Sandtone, Gray. Order today from your local stationer.

C. Howard Hunt Pen Co. • Camden 1, N. J.



**ONE
BOSTON
TO A
DESK**



For More Information Write No. 218 on Inquiry Card—Page 32

PURCHASING

Now—electronic dictation comes of age through McGraw-Edison's inventive heritage!



Take the mike...

see how the **new M-E Voicewriter**
helps you break through the "time-barrier"
to new success!

You'll take the mike . . . dictate . . . and suddenly you'll realize that electronic dictation has come of age . . . that any other dictating method is now old-fashioned!

You'll see how 70 years of experience in office correspondence . . . plus McGraw-Edison continuing research . . . have made this M-E Voicewriter the finest dictating instrument ever built. Its

features? All you would expect to find in the finest . . . and then some!

Think we've exaggerated? We offer you a friendly challenge to "take the mike"—see for yourself! Contact your nearby Edison Voicewriter representative now . . . or write us at the address below. Once you take the mike . . . *your* talk will be our best sales talk!

Voicewriter

A product of Thomas A. Edison Industries, West Orange, N. J.
In Canada: 32 Front St. W., Toronto, Ont.

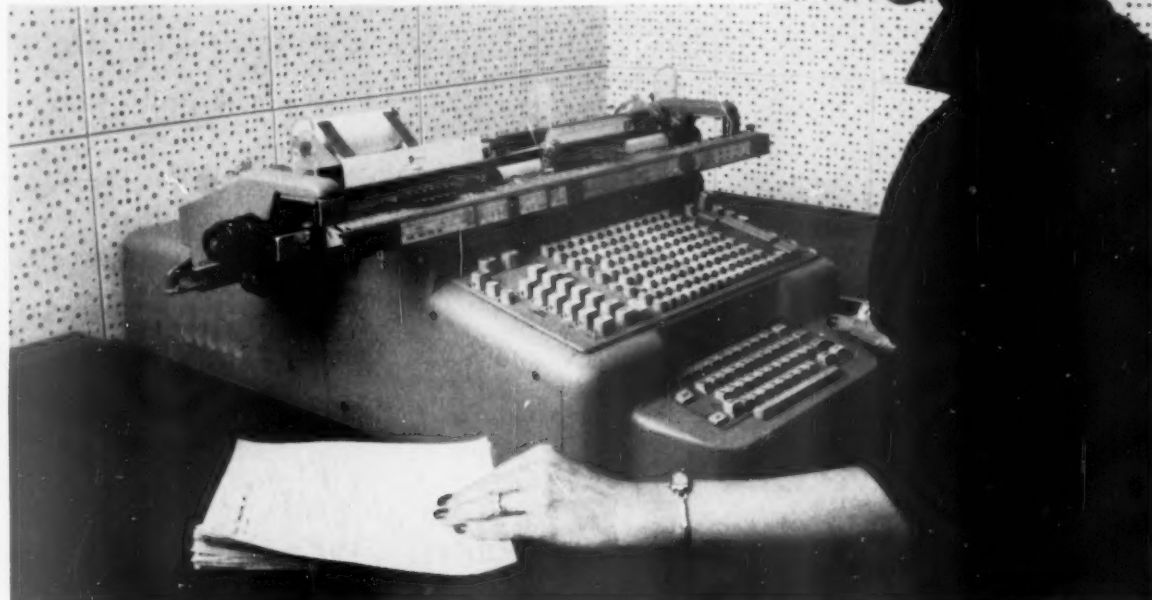




R. WALLACE, President of the R. G. Wallace Company, Inc.



MODERN HEADQUARTERS of the R. G. Wallace Company, Inc., in Culver City, California, Aircraft Hardware Manufacturer.



THIS NATIONAL ACCOUNTING MACHINE handles all record-keeping work quickly and efficiently, supplying the R. G. Wallace Company with important accounting information that is readily available at all times.

"Our *National* System
saves us \$7,800 a year...
pays for itself every 9 months."—R. G. Wallace Company, Inc.
Culver City, California

"We attribute a large portion of our success during the seven years we've been in business to the mechanization of our bookkeeping department with a National System," writes R. Wallace of R. G. Wallace Company, Inc. "We've established ourselves in a highly competitive field mainly through our ability to process orders with speed and at low unit cost."

"The many records we require are handled quickly and accurately by our National providing us with important business information that is always immediately available. Although our National handles these complex ac-

counting jobs with maximum speed and efficiency, it is simple to operate. We find any employee in our office can easily learn to operate our National Machine.

"Through increased efficiency and reduced record-keeping costs, our National System saves us more than \$7,800 a year, pays for itself every 9 months."

R. G. Wallace

President,
R. G. Wallace Company, Inc.

Your business, too, can benefit from the time- and money-saving features of a National System. Nationals pay for themselves quickly through savings, then continue to return a regular yearly profit. National's world-wide service organization will protect this profit. Ask us about the National Maintenance Plan. (See the yellow pages of your phone book.)



TRADE MARK REG. U. S. PAT. OFF.

National*

ACCOUNTING MACHINES

ADDING MACHINES • CASH REGISTERS
NCR PAPER (NO CARBON REQUIRED)

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio

1039 OFFICES IN 121 COUNTRIES • 75 YEARS OF HELPING BUSINESS SAVE MONEY

For More Information Write No. 220 on Inquiry Card—Page 32
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For More Information Write No. 221 on Inquiry Card—Page 32→
PURCHASING



Donald MacGregor, Vice President—Production, Zenith Radio Corporation

"Moore forms help us keep inventories at healthy levels"

CONTROL REGULATES ZENITH'S PRODUCTION OF FINISHED TV SETS TO THE MARKET DEMAND

A new system keeps Zenith Radio Corporation from 'running in the dark' when scheduling production. A daily report gives management complete production information at the opening of business each day. This allows faster changes in scheduling, purchasing, and production. Deliveries to distributors go out on time. Capital isn't frozen in large inventories.

On the operating side, data from the production lines and the warehouse are 'captured' in punched cards and fed into an electric accounting machine. The machine prints, on a 6-part Moore continuous form, actual factory performance and scheduled production for comparison. This is Zenith's control in print.

The new Zenith system has brought many operating benefits. With only one copying step, errors are cut to a minimum. Preparation time has been chopped from as much as 10 hours to 2½ hours. Savings in clerical time—5600 hours a year.

The Moore man advised on form design for this Automated Data Processing (ADP) system. For more information and other examples of Moore-planned systems, and the forms tailored to them, write to the nearest Moore office.

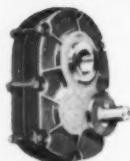
MOORE BUSINESS FORMS, INC., Niagara Falls, N.Y., Denton, Texas; Emeryville, Calif. Over 300 offices and factories throughout U.S., Canada, Mexico, Caribbean and Central America.



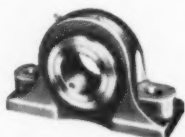
Build control with

MOORE BUSINESS FORMS

DODGE
PRODUCTS
you
should
know



TORQUE-ARM
SPEED REDUCERS
Cost less—deliver more!



SC AND SCM
BALL BEARING PILLOW BLOCKS
"The seal won't blow!"



TAPER-LOCK
SPROCKETS
No reboring—no waiting!

Write for Bulletins!

- ☒ Torque-Arm Speed Reducers, 15 sizes—1 to 100 hp. Bulletin A-637
- ☒ Rolling Bearings—Ball and Timken Tapered Roller. Bulletin A-638
- ☒ Taper-Lock Sprocket and Dodge Roller Chain data. Bulletin A-644

DODGE MANUFACTURING CORPORATION
1300 Union Street • Mishawaka, Indiana

DODGE

of Mishawaka, Ind.

For More Information Write No. 222
on Inquiry Card—Page 32

Association News

Grand Rapids Ass'n Hears About Diamonds

The Grand Rapids Association of Purchasing Agents was privileged to hear John D. Kennedy, manager of the diamond section, metallurgical products department of the General Electric Company of Detroit, Michigan, speak at a recent dinner meeting. Mr. Kennedy, who holds a B.S. Degree in mechanical industrial engineering, spoke on "Man-Made Industrial Diamonds" compared to the natural type.

Sales Executive at Cleveland

G. R. Moore, vice president of sales and advertising for Thompson Ramo Wooldridge, Inc., spoke at a recent purchasing-sales meeting of the Purchasing Agents Association of Cleveland. His highly informative and entertaining talk was well received by the members and their fellow sales executives.

After Secretary-Treasurer W. H. Conant read proposed resolutions, President Leonard Krupka asked for reports from several committee chairmen; Harold Matthews, standardization; S. Bodner, sports; S. P. Brownell, education.

A special guest of the association, T. R. Thompson, 6th District vice-president, gave a few of his thoughts to the assemblage.

Economist Addresses Akron Ass'n

James M. Dawson, vice president and economist for the National City Bank of Cleveland, took "A Crystal Ball Look at Business" at a recent meeting of the Purchasing Agents Association of Akron. Mr. Dawson analyzed the current recession in terms of the patterns of previous recessions. Naturally enough, the final part of the analysis led to an economic prediction for next year: a continuation of the current rate of improvement.

The meeting, entitled "Executive Night," was attended by many bosses.

A Northeastern Penn Ass'n Meeting

The Purchasing Agents Association of Northeastern Pennsylvania met at the Hotel Sterling, Wilkes-Barre, Pa., with President Fred Gilbert presiding.

Invocation was given by Ralph Lewis.

Treasurer, George Malosh reported a Cash Balance on Hand as of this date of \$422.09.

Several guests were introduced. Ralph Lewis, Chairman of the Program Committee spoke about the visitation trip to the Plant of the Capitol Records Co., Scranton, Pa. Ralph also spoke about and handed out a schedule of programs for the balance of the season, listing thereon the time, place and type of future meetings.

Howard R. Baird, chairman of the membership committee handed out names of prospective members in the Wilkes-Barre Area and asked that everyone at least obtain one new member this year. He said a prize would be awarded to any member who obtained three new members.

District Vice President Jack Brandamore introduced the speaker of the evening, E. Philip Kron of the Eastman Kodak Company, who spoke on the subject "Value Analysis-Standardization" and also showed slides about the same.

Rhode Island Catches Up On Aluminum

Dan Cheyney, manager of product development, Kaiser Aluminum and Chemical Sales, Inc., addressed a meeting of the Rhode Island Purchasing Agents Association. Mr. Cheyney spoke on the subject of "New Developments in Aluminum."

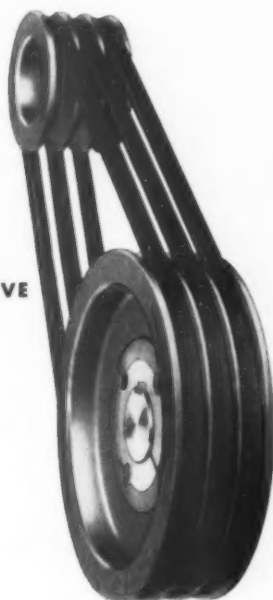
At the meeting, the following new members were admitted to the association: Nicholas Marra,

(Please turn to page 108)

Announcing
an entirely new line of
V-Belt Drives

DODGE
Dyna**V**

**CONVENTIONAL
TAPER-LOCK DRIVE**



**DYNA-V
TAPER-LOCK DRIVE**

**NEW
NEW
NEW** **HIGH CAPACITY
COMPACTNESS
SAVINGS
IN COST**



COMPARISON, ILLUSTRATED ABOVE — 3 HP, 1750 RPM, 2.41 TO 1 RATIO

	BELTS		SHEAVES			CENTER DIS- TANCE	HP	WEIGHT (LBS.)	COST	
	Number	Size	O.D. Driver	O.D. Driven	Width				Per hp	Per Drive
CONVENTIONAL TAPER-LOCK DRIVE	3	A42S	4.15"	8.95"	2½"	12.3"	4.62	24.7	\$5.91	\$27.38
DYNA-V TAPER-LOCK DRIVE	2	3V400	3.35"	8.00"	1¾"	10.8"	5.0	18.0	\$4.50	\$22.50
% SAVING <i>Savings vary with different sized drives</i>			19%	10%	56%	12%	+	27%	23.8%	17.8%

Dyna-V Drives are sensationally compact. They are capable of handling up to three times as much horsepower in a given space. Dyna-V opens vast new possibilities for better, more economical machine design. And, in most instances, *Dyna-V costs less!*

Narrower grooves, to match stronger, narrower Dyna-V Belts, greatly reduce the face width and the weight of Dyna-V Sheaves. Cost is lowered. Smaller diameter sheaves and shorter center distances multiply savings.

Dyna-V Sheaves decrease shaft overhang—increase bearing life. The new dimensional stability of Dyna-V Belts solves the problem of belt matching. Every belt carries its full share of the load.

Dyna-V Drives will be available for capacities from 1 to 1500 hp. Ask your Dodge Distributor. Or write us for new Dyna-V Bulletin.

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CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the white pages of your telephone directory for "Dodge Transmissioneer."



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JANUARY 5, 1959

107

Production costs too high? **BOSSERT** METAL STAMPINGS offer many ways to reduce costs!



Whether your product is in the planning stage or in production, you can often reduce costs by using metal stampings for parts or complete assemblies. Complex forms can usually be produced with fewer operations, with holes punched to exact dimensional accuracy, eliminating separate drilling, machining and assembling.

Several parts can be combined in a single stamping, and you can take advantage of the weight-saving features of lighter metals and alloys without sacrificing strength or durability. Your present production costs can be reduced, too, with Bossert's superior quality and dependable service.

Design Engineering Service

Bossert's re-design service can help you develop stampings for parts and assemblies that are now being cast or forged or machined, usually with substantial savings in cost. Send us blue prints or samples for our recommendations.

Write for literature

Find out how our facilities can be helpful to you.

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UTICA, NEW YORK

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RAIL AND TRACK EQUIPMENT

You can get everything you need for industrial track and crane runways — with one call to your nearest Foster office. Immediate deliveries from the nation's largest warehouse of rails (both new and relaying), switch material, and track accessories. Send for free catalogs and ordering guides.

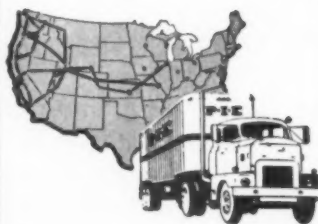
Complete Contractor Service—Since 1901

L. B. FOSTER co.

PITTSBURGH 30 • ATLANTA 8 • NEW YORK 7
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P-I-E

PACIFIC INTERMOUNTAIN EXPRESS

TERMINALS AND OFFICES
IN PRINCIPAL CITIES

GENERAL OFFICES: P-I-E BUILDING
14th AND CLAY STREETS

P. O. BOX 958 OAKLAND 4, CALIF.

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Association News

(Continued from page 106)

Raytheon Manufacturing Company; Daniel W. Vecchia, Grant Money Meters Company; J. Edward Ormand, Kindelan Piping & Supply Company; and Fred H. Schofield, Jr., J. & H. Electric Supply Company.

South Bend P.A.'s Hold Second

Educational Program

"Value Analysis" was the subject of the second in a series of five educational programs presented by the South Bend Purchasing Agents Association at the Ramble Inn, Roseland, Indiana.

Under the direction of Professor Vincent R. Raymond of the University of Notre Dame College of Commerce, an actual case history taken from the files of the Harvard Business School was presented as the subject for discussion. The case history concerned the inner workings and methods of a value analysis section of a large corporation, and gave several specific instances of dollar savings made through effective usage of value analysis. As in the case of each actual case history, no definite conclusions are drawn from any given situation, but the discussions stimulate independent and creative thinking. The object of this type of program is to increase the individual's efficiency and ability to thoroughly analyze situations which may arise in his everyday living and working.

At the conclusion of the program, Professor Raymond suggested that each man ask himself, "Can Value Analysis do anything for my organization?" In light of the comments made and questions asked during the presentation, it is doubtful that any person present could ignore this question.

The interest of the membership remains high and record attendance continues to be the rule at each meeting.

The next program in this series will be held on January 14 at the Ramble Inn, and will be devoted to the subject of "Inventory Control and Management."

For More Information Write No. 227
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introducing
the **ALL NEW**
SIZE 834 impactool...
1 1/4" capacity

25% more power!
6 3/4 inches shorter!
7 pounds lighter!

than the size 534

optional features

Spline Drive Anvil

For transmission of maximum power to the socket, many prefer the spline drive which is optional. The closer fit and greater driving area also provide increased socket life.

Swivel Inlet Assembly

Where extreme maneuverability is a problem, the optional swivel inlet assembly makes the hose easier to handle.

Inside Trigger Handle

Preferred by some operators, the optional inside trigger handle prevents the possibility of the operator's hand being caught when the tool is used in extremely close quarters.

FREE! New Form 5248—describes the Ingersoll-Rand 834 Impactool in detail. Contains photos, specifications and lists standard and optional equipment and accessories.

WRITE TODAY! Ingersoll-Rand

11 Broadway, New York 4, N. Y.

for faster run-down, easier operation
and better maneuverability in tight spots . . .

MOTOR Powerful new vane-type motor with direct drive to hammer provides greater torque and five times faster run-down. Motor housing is machined from a strong, lightweight alloy.

IMPACT MECHANISM New design operates at maximum efficiency to tighten the toughest nuts and bolts. Rated capacity, 1 1/4" thread size. No kick or twist is transmitted to the operator.

THROTTLE VALVE Graduated-action throttle valve permits quick homing of socket on nut. Rubber face provides positive seal; can be quickly and economically replaced when necessary.



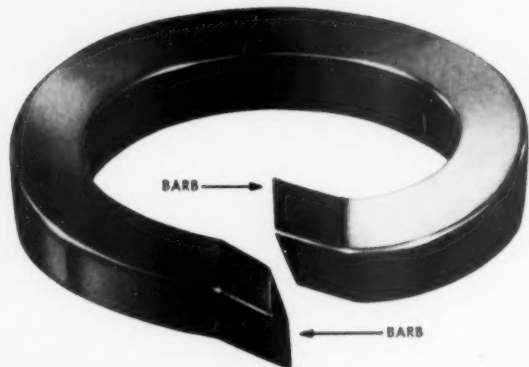
Tools plus AIR engineering
increase output per man



NOW for the FIRST TIME

the ORIGINAL

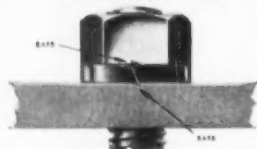
NON-LINK POSITIVE LOCK WASHERS



AT NO EXTRA COST!



This Is The Machine
That Makes It Possible



Be SURE with NON-LINK
POSITIVE Lock Washers —
the "barbs" make
the difference

This illustration shows how NON-LINK POSITIVE Lock Washers combine the advantages of tooth-type washers with the proven spring-power of regular lock washers. Arrows point to the teeth or "barbs" in both the nut and the bearing surface. At the same time, the spring-power maintains the tension which assures a permanently tight assembly.

Automation Eliminates Costly Operations

A new, high-speed fully automated process (Patent Pending), developed by POSITIVE produces these superior lock washers at low cost because it eliminates slow, costly manual operations formerly required. As a result, you can now buy NON-LINK POSITIVE Lock Washers in 9 Popular Sizes (A.S.A. Medium) at the same price you are paying for conventional spring lock washers.

9 Popular Bolt and Screw Sizes (A.S.A. Medium)

3/16", 1/4", 5/16", 3/8", 7/16",
1/2", 9/16", 5/8", 3/4"

Test their superior holding power and be convinced that they combine all the advantages of tooth-type washers with those of live action spring lock washers. NON-LINK POSITIVE Lock Washers have long been known as the *sure way* to keep bolts and nuts tight — and remember, now you can buy them at the same price as regular lock washers.

Send for FREE Trial Order

If you will write us on your company letterhead, we'll gladly send you FREE a small quantity of NON-LINK POSITIVE Lock Washers in any or all of the 9 popular sizes listed above (A.S.A. Medium Section).

POSITIVE LOCK WASHER CO.

183 Miller St. • Newark 5, N. J.

Manufacturers of High Grade Lock Washers Since 1890

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Association News

Chesney Visits Eastern N.Y. Ass'n

J. Dukehart Chesney, purchasing agent of Huyck Felt Company, Rensselaer, New York, and vice-president of the 8th District of the National Association of Purchasing Agents was the main speaker at a regular meeting of the Eastern New York Association of Purchasing Agents held at Wolfert's Roost Country Club. Mr. Chesney gave a very interesting talk on the history of NAPA and the possible future for the purchasing profession.

The commodity committee under the chairmanship of Frank M. Roos, purchasing agent of Consolidated Metal Products Corp., Albany, New York gave a very complete report on the status of ferrous metals, coal, wool, paper, rubber, and non-ferrous metals. National director William H. Flint, manager of purchases, Cluett, Peabody, & Company, Troy, New York, reported on the success of the 8th District NAPA Conference held in Elmira, New York.

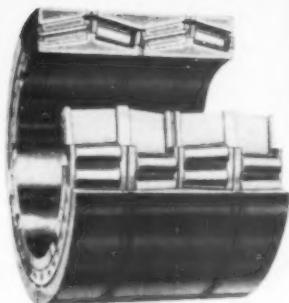
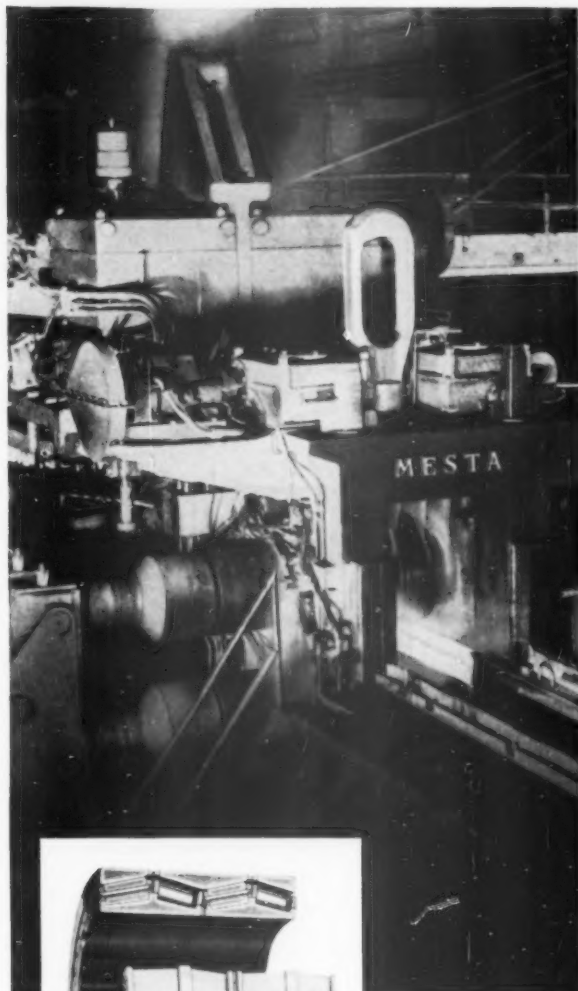
Wisconsin N.I.G.P. Tours New City Building

A meeting of the Wisconsin Chapter of N.I.G.P. was held at Madison, Wis. Barney Gill, purchasing agent for the city of Madison, arranged a tour of the new city and county building for the members. Talks on purchasing subjects were given and G. L. Guetzkow, director of allocations and priorities for the Milwaukee purchasing department talked on methods to be used for best results in obtaining surplus material and equipment and for civil defense. He said some states have different methods of getting such equipment and material, and, as the methods used are not uniform, a conference is to be held in Washington soon, so that all states may use similar methods in disposing of surplus material and equipment to avoid confusion.

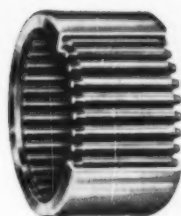
Typewriter purchases for city and county use were discussed,

(Please turn to page 112)

PURCHASING



from
steel mills...



to
farm tractors

Torrington makes the right anti-friction bearing for every basic need!

... Huge Tapered Roller Bearings to handle severe radial and thrust loads in steel rolling mills. Or thin-section Needle Bearings to save space and weight and still provide the highest possible radial capacity.

Between these two examples lie all kinds of requirements. To meet the broad range of needs, Torrington makes every basic type of anti-friction bearings.

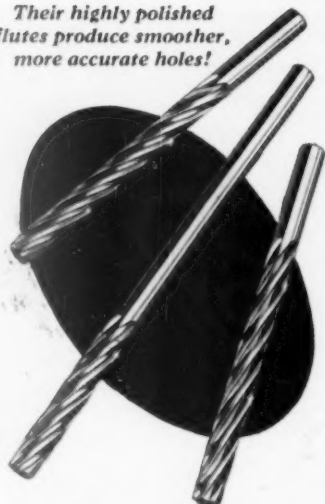
The Torrington Company, with this broad experience to draw on, has collaborated with industry in thousands of successful applications. Rely on your Torrington representative for help in developing the *right* anti-friction application for you. **The Torrington Company, Torrington, Conn.—and South Bend 21, Ind.**

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

TAPERED ROLLER • SPHERICAL ROLLER • CYLINDRICAL ROLLER • NEEDLE • BALL • NEEDLE ROLLERS • THRUST

*Their highly polished
flutes produce smoother,
more accurate holes!*

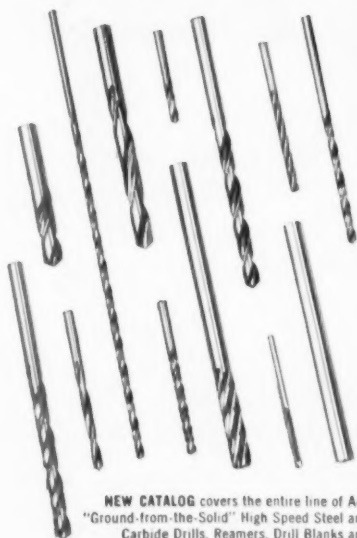


ACE

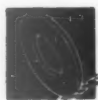
Drill Length and Chucking REAMERS

For the finest reamers that money can buy, always specify "ACE"! They're made of top quality, pre-hardened high speed steel and produced by the Ace-originated "ground-from-the-solid" process. Results? Stronger, more highly polished right hand spiral flutes. Keener, longer lasting cutting edges. Plus smoother, more accurate holes at lower cost!

Call your local Ace Drill Distributor today!



NEW CATALOG covers the entire line of Ace "Ground-from-the-Solid" High Speed Steel and Carbide Drills, Reamers, Drill Blanks and Special Drills. Send for it today!



ACE DRILL
ADRIAN, MICHIGAN

ORIGINATORS OF "GROUND-FROM-THE-SOLID" DRILLS

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on Inquiry Card—Page 32

Association News

(Continued from page 110)

and it was learned that while, in the past, schools were able to purchase machines at a better discount than accorded to the U. S. government, schools must pay the same price as charged to the government.

Plant Toured by New England P.A.'s

The members of the New England Purchasing Agents Association made a visit to the manufacturing plant of Andrew Wilson Company, 616 Essex Street, Lawrence, Mass. Andrew Wilson Company manufactures a complete line of steel shelving, as well as storage cabinets and lockers. Their facilities in Lawrence were recently modernized by the installation of automatic equipment which carries the metal parts through all stages of spray painting and drying and delivers them directly to the assembly line. A product display showed the evolution of lockers and shelving over the past fifty years. Earl Sargeant, sales manager, gave a brief presentation on how to plan and order the equipment for a storage area, showing how to get the maximum use of the available space.

Milwaukee's Second Purchasing Conference

The Milwaukee Association of Purchasing Agents presented its second annual Purchasing Conference at the Elks Club in Milwaukee.

A possible explanation for the obvious success of the conference is the quality of the speakers: Stuart F. Heinritz, senior editor of PURCHASING Magazine, "A Time for Purchasing Decisions"; J. Frederic Wiese, vice president, commercial, Lukens Steel Company, "Procurement's Role on the Management Team"; William L. McCaskill, training director of Worrell-Consolidated Laboratories, "Principles of Persuasion"; Fred Smith, Fred Smith Associates, "Progress Comes in Small Packages."

THE TOOL



THE TECHNIQUE



For lowest cost
per unit processed
they're both

Anderson

Write for complete catalog of wire
brushes, with detailed selection and
operation data.

Anderson
ANDERSON CORPORATION

1046 Southbridge Street
Worcester, Mass.

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PURCHASING

Association News

Denver Has Picture Roster

The Purchasing Agents Association of Denver has something which should be of interest to other associations: a roster of members with a small picture of each member located next to his name and company affiliation. This seems like an excellent way to help members—particularly new ones—learn names, as well as faces.

Fordyce at Syracuse- Central-New York

Gailon C. Fordyce, assistant director of purchases, American Cyanamid Company, explained the "Job of the Buyer" at a recent dinner meeting of the Purchasing Agents Association of Syracuse and Central New York.

Mr. Fordyce gave a frank discussion of the buyer's responsibilities, requisites, and record. In addition, he discussed the counseling, guiding, training, and rewarding of buyers.

This was the first in a series of talks on the purchasing function which the association is giving. Some of the future subjects: "The Job of the Purchasing Manager"; "Measuring of Purchasing"; and "Management Looks at Purchasing."

Campbell Gives Economic Outlook to Chicago P.A.'s

A recent meeting of the Purchasing Agents Association of Chicago was held at the Morrison Hotel. Tom C. Campbell, editor-in-chief of Iron Age, discussed the latest developments in labor, steel, housing, and politics. The Economic Outlook for 1959-1960 was the topic of his talk.

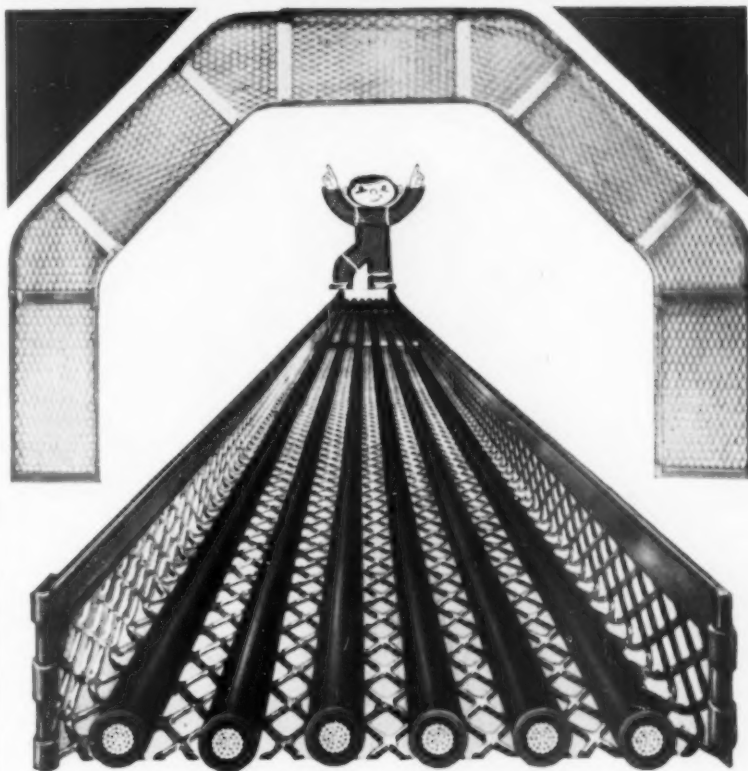
N.A.P.A. Outlined to Little Rock Ass'n

The Little Rock Association of Purchasing Agents listened to James E. Clark, vice president of District Seven, at a recent month-

(Please turn to page 116)

JANUARY 5, 1959

THIS IS COPE WIREWAY for Power Cable Distribution



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Prepare for your company's next power cable installation by getting the facts from the pioneer manufacturer of cable supporting systems and equipment. Contact your authorized Cope electrical wholesaler or write to T. J. Cope Division, Rome Cable Corporation, Collegeville, Pa.

- An inventory of over 1,000 Cataloged Items—Straight Sections, Fittings and Accessories.
- Available When You Need It from Stock.
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integrated CRUCIBLE steel service



Orders for specialty steels go out fast — usually overnight or even earlier — from local Crucible warehouses.

That's because each warehouse has a wide variety of grades and sizes on hand, at all times.

gives you local stocks of 16,000 specialty steel items for immediate delivery

Within minutes, the Crucible inside account salesman can tell you if the grades, sizes and quantities you need are available. He'll check his customer's master file for your delivery requirements; billing details, etc. And then he'll quickly arrange for cutting to meet customer's requirements. So deliveries are swift and sure.

This combination of large local stocks and warehouse efficiency means you can fill even the most varied or unusual requisitions for specialty steels with a single phone call.

It's a basic reason why purchasing agents who *depend* on local sources call Crucible *first* — like this one:

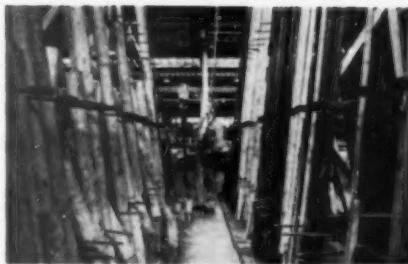
"We're basically a tool and die 'job' shop. We never know what steel we'll be using from one day to the next. So whatever we need, we need fast. It has been our experience that it saves time to call the Crucible warehouse first."

Why not simplify and speed up your specialty steel purchases by relying on your local Crucible warehouse? The advantages of Crucible's entire integrated operation, from mining the ore to steelmaking and warehouse delivery, are all available through the nearby source. *Crucible Steel Company of America, Dept. PA13, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

STOCK LIST

Keeps you up-to-date on local stocks of specialty steels. Just ask the Crucible salesman to place your name on the regular mailing list.

One Source
For All
These Steels



Local warehouse can fill both large and small orders from stocks like these of hollow tool steel sections and solid rounds.



Die casting die steels and plastic mold steels stand ready for cutting to order and immediate delivery.

TOOL STEELS — Water, oil, air hardening, shock resisting, hot work, plastic and die casting steels in all forms, including bars, sheets, plates, drill rod, hollow bars, forgings and flat ground stocks

HIGH SPEED STEELS — Crucible's famous "Rex"® steels: Rex Thrift Finish rounds, hot rolled and cold drawn flats and squares, drill rod, forgings, sheets, plates, and tool bits

STAINLESS STEELS — Bars, sheet, strip, wire, cold heading wire, metalizing wire, plates, angles

FREE MACHINING STEELS — Crucible Max-el® rounds, hexagons, plates and broke die steel

ALLOY STEELS — Bars, billets, strip and sheet

COLD ROLLED CARBON SPRING STEELS

DRILL STEELS — Hollow and solid drill steels

ALUMINUM EXTRUSION DIE STEELS

HOLLOW TOOL STEEL



Most Crucible warehouses stock stainless bars — stack them upright in "A" racks to protect the surfaces.



Need stainless sheet? The local warehouse stocks most types, finishes and sizes for prompt delivery to you.

WELDING AND HARD FACING ROD

PLASTIC MOLD STEELS

PERMANENT MAGNETS

— and many others

CRUCIBLE STEEL COMPANY OF AMERICA

Branch Offices and Warehouses: Atlanta • Baltimore • Boston • Buffalo • Charlotte • Chicago • Cincinnati • Cleveland • Columbus • Dallas • Dayton • Denver • Detroit • Grand Rapids • Harrison • Houston • Indianapolis • Kansas City • Los Angeles • Milwaukee • New Haven • New York • Philadelphia • Pittsburgh • Portland, Ore. • Providence • Rockford • Salt Lake City • San Francisco • Seattle • Springfield, Mass. • St. Louis • St. Paul • Syracuse • Tampa • Toledo • Tulsa • Toronto, Ont.

Happy workers... your best asset



Halsey Taylor

is a big help, too

Workers are happy and productive when Halsey Taylor coolers are used. Abundant cool water is a "must" in any plant—and it's assured with Halsey Taylor.

Illustrated is Halsey Taylor cooler with stainless steel top, health-safe projector, dual control, built for lifetime service.



You make no mistake in choosing Halsey Taylor coolers or fountains. You can select from the most complete line for '59, with a type for every need in plant or office.

Write for catalog or see Sweet's.

The Halsey W. Taylor Co., Warren, Ohio

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SPECIAL RIVETS

like some of the samples shown here... or the more commonly used tubular and split rivets... they're all alike to the American Rivet Co. And always—our own special brand of quality and service that gets you what you want when you want it.

THE AMERICAN RIVET CO., Inc.
849 N. Kedzie Ave., Chicago 51, Ill.

Write for price list. For specials, send specifications for prices.

BUY AMERICAN Tubular and Split RIVETS

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Association News

(Continued from page 112)

ly meeting. Program Chairman Ed Tinnell introduced Mr. Clark, who gave a very thorough outline of the workings of the National Association of Purchasing Agents. All of the members thoroughly enjoyed Mr. Clark's comments.

Hallowell Speaks at New York Meeting



H. Thomas Hallowell, Jr.

H. Thomas Hallowell, Jr., president of the Standard Pressed Steel Company and president of the American Standards Association, was the principal speaker at the regular monthly meeting of the Purchasing Agents Association of New York held at the Hotel New Yorker.

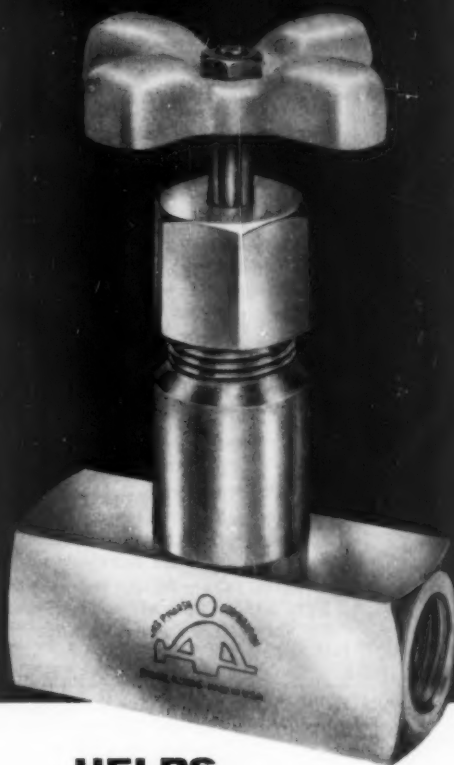
Mr. Hallowell, economist, inventor and outstanding industry leader discussed "The Purchasing Agent's Stake in Value Analysis." He pointed out that the purchasing agent plays a vital role in modern industry by assuring most efficient procurement through value buying and standardization.

The forum discussion on "Performance Budgeting" was led by Richard B. Johnson, training director of the Consolidated Natural Gas System. Mr. Johnson, former training co-ordinator for the Port of New York Authority, illustrated how performance budgeting can be a management tool for forecasting, controlling and recording. A fellow in management development of the American Management Association, with extensive experience in seminar and workshop training—

(Please turn to page 118)

For More Information Write No. 236 on Inquiry Card—Page 32→

**HOW THE
BIG DIFFERENCE
IN COLD FINISHED
STEEL BARS**



**HELPS
MAKE POSSIBLE THE BIG DIFFERENCE
IN MARSH NEEDLE VALVES**

Micrometer regulation and positive shutoff at both extremely high and low pressures were sought for a new precision valve at Marsh Instrument Co., Skokie, Ill. The result was the first throttling and shutoff needle valve that operates efficiently and safely at all pressures up to 10,000 psi.

The big difference in the Marsh valve is the unique one-piece construction from cold finished bar steel. The body and stem guide are fused into one piece by the exclusive Marsh "Conoweld" process. There is another important difference, too. The body, packing nut and packing gland are electro zinc plated, which, with the stainless steel stem, not only provides corrosion-resistance but a clean, glistening, quality appearance.

Bliss & Laughlin's Lusterized® cold drawn bar steels are used by Marsh for this unique valve. Free from drawing oils, lime and processing grit, B&L Lusterized bars contain a minimum of processing contaminants to interfere with Marsh's fusion process and precision machining. B&L Lusterized bars also readily take the zinc plating without elaborate preparation because they start out cleaner, brighter and are easier to handle.

There is a good chance the big difference in cold drawn bars—the B&L Lusterized difference—can contribute importantly in helping establish a big difference for your product, too. It's worth checking, especially since you pay no more when you specify "Bliss & Laughlin Lusterized."

Originators of LUSTERIZED® Finish—The BIG DIFFERENCE in Cold Drawn Steel Bars

BLISS & LAUGHLIN

GENERAL OFFICES: Harvey, Ill. • PLANTS: Harvey, Detroit, Buffalo, Mansfield, Mass.

*Specialists in
Finish, Accuracy,
Straightness, Strength
and Machinability*

Fairbanks 5 Cost-Cutters For Your Light, Bulky Materials Handling Jobs

rugged construction and smoother operation
take the load off your mind . . .



9215-S General Purpose Truck — more widely regarded as a necessary tool in shipping rooms, stores, warehouses, passenger baggage terminals and with transfer and express companies — for use on delivery trucks—where it is unsurpassed for handling small lot merchandise including round objects. Steel framed construction.



A-1448 Utility Truck — very popular in stores, offices, institutions, shipping rooms and factories for carrying small lot merchandise and widely used in bottling and beverage plants and on beverage delivery trucks for moving case lots. All steel welded construction, fitted with stair climber.



Lift Jack Platform Trucks — perfect answers for minimum cost temporary storage of raw material, parts, semi-finished goods or finished pieces. Jack handle has no moving parts — engages and disengages semi-live skid simply and quickly. One jack handle sufficient for a number of platforms.



"Bantamweight" Platform Trucks — outstanding values for lightweight materials handling from low initial cost through minimum operating expense. Readily adaptable to continuous conveyor systems. Light and strong construction, very mobile on Fairbanks "Lockweld" Double Ball Race Swivel Casters and matching rigid casters.



T-1114 Dollies — providing greatest maneuverability for bulky merchandise on Fairbanks "Lockweld" Steel Double Ball Race Swivel Casters. Very popular trucks with furniture movers, storage warehousemen and truckers.

YOURS ON REQUEST: Fairbanks Truck Catalog, complete with illustrations and specifications describing Fairbanks Trucks.

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VALVES • TRUCKS • CASTERS • WHEELS • DART & "PIC" UNIONS

For More Information Write No. 237 on Inquiry Card—Page 32

Association News

(Continued from page 116)

including a very successful purchasing management workshop this past Spring, for the Purchasing Agents Association of New York, Mr. Johnson proved eminently qualified to lead the forum discussion.

Georgia P.A.'s Hear College President

"To acquire professional status, purchasing men must be willing to pay the price", was the challenge Noah N. Langdale, Jr., president of Georgia State College of Business Administration in Atlanta, issued to members of the Georgia Association of Purchasing Agents at their dinner meeting in Atlanta. Taking as his subject "Scholarship and Professional Purchasing", Mr. Langdale forcefully and eloquently stirred the minds of a record group of 68 purchasing agents and their guests.

Purchasing agents were urged by Mr. Langdale to awake to the value of the purchasing profession as an arm of enlightened management in preserving the American way of life. He pointed out that business today primarily competes on cost saving, with cost control assuming greater importance than maximization of profits. Since costs can only be controlled by efficiency and business can only be efficient with enlightened management, it is of vital importance today that our business managers, particularly including our purchasing agents, have the knowledge and power that comes through education.

























In addition to the main speaker of the evening, members of the Georgia Association heard a brief report from NAPA V-P Jim Clark on the 7th District Council Meeting and Conference in Jacksonville in October. Members were advised of the following schedule for future 7th District Conferences: 1959—Chattanooga; 1960—Memphis; 1961—Atlanta.

The association's Education Committee (Julian Ivey, chairman) gave the first of a series

(Please turn to page 120)

PURCHASING

6 Reasons why Waldes Truarc is your one dependable source for retaining rings

					
Series 5000 internal	Series 5100 external	Series 5008 inverted internal	Series 5108 inverted external	Series 5001 bowed internal	Series 5101 bowed external
					
Series 5002 beveled internal	Series 5102 beveled external	Series 5103 crescent	Series 5131 bowed E-ring	Series 5133 E-ring	Series 5139 locking prong
					
Series 5555 grip ring	Series 5107 interlocking	Series 5005 self-locking internal	Series 5105 self-locking external	Series 5300 triangular nut	Series 5305 triangular self-locking
					
Series 5400 A special purpose	Series 5104 special purpose	Series 5500-31 special purpose	Series 5500-96 special purpose	Series 5504 special purpose	Series 5505 special purpose
WHATEVER YOU MAKE, THERE'S A WALDES TRUARC RING DESIGNED TO SAVE YOU MATERIAL, MACHINING AND LABOR COSTS					

COMPLETE SELECTION—All your retaining ring requirements can be obtained from this one dependable source. Waldes Truarc rings are available in 36 functionally different types... as many as 97 standard sizes within a ring type... 5 metal specifications and 14 different finishes.

MANUFACTURING EXPERIENCE—Waldes Truarc pioneered precision retaining rings. Truarc Rings have been standardized by leading U. S. industries and Government agencies. Waldes Kohinoor, Inc. has over 50-years experience in inventing, developing, and manufacturing precision fasteners.

QUALITY CONTROL—Every step in the manufacture of Waldes Truarc rings—from engineering and raw materials through to the finished product—is carefully controlled and tested in our own modern plant. Truarc standards are the highest in the industry—your guarantee of consistent, uniform quality.

DESIGN SERVICE—For help in designing new products or in refining present designs, send your blueprints to Waldes Truarc engineers. Whether your product requires standard or custom-designed rings, these experts are ready to help you. They will also design special assembly jigs and fixtures—or even help you set up an automation assembly operation.

FIELD ENGINEERING SERVICE—More than 30 engineering-minded factory representatives and 700 field men are available to you on call! This engineering service can prove invaluable in helping you to solve design, assembly and production problems.

DISTRIBUTION—Truarc rings are available from leading OEM Distributors in 90 stocking points throughout the United States and Canada.



WALDES TRUARC[®] RETAINING RINGS
WALDES KOHINOOR, INC.
LONG ISLAND CITY 1, NEW YORK

WALDES TRUARC Retaining Rings, Grooving Tools, Pliers, Applicators and Dispensers are protected by one or more of the following U. S. Patents: 2,382,948; 2,411,426; 2,411,761; 2,416,852; 2,420,921; 2,428,341; 2,439,785; 2,441,846; 2,455,165; 2,483,379; 2,483,380; 2,483,383; 2,487,802; 2,487,803; 2,491,306; 2,491,310; 2,509,081; 2,544,631; 2,546,616; 2,547,263; 2,558,704; 2,574,034; 2,577,319; 2,595,787, and other U. S. Patents pending. Equal patent protection established in foreign countries.

YOU can name your own

WRM PHOSPHOR BRONZE

*—because it's Custom-Processed
for YOUR application*

Waterbury Rolling Mills can tailor phosphor bronze so closely to your specific requirements that it practically becomes your private brand. You'll get the finish, grain size and physical properties that will suit your purpose to a "T"

Waterbury has the latest in rolling and annealing equipment plus the intimate knowledge of the metal that comes with over 50 years of specialization. That's why WRM can make phosphor bronze that will behave exactly as you want it to under your tools and in your product.

Available in strip, sheet or coil

For complete information on Waterbury Rolling Mills facilities, abilities and metals, send for this new, 60-page catalog. A phone call or a note on your letterhead will bring it to you, without obligation.



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Association News

(Continued from page 118)

of 5-minute "quickie" talks on pertinent purchasing subjects—this one by Luther T. Spivey, Jr. on how inventories on between 4,000 and 5,000 different production items are controlled at Auto-Soler Company.



Jackie Robinson was the principal speaker at a recent meeting of the New York Purchasing Agents Association. Speaking on "Teamwork," Mr. Robinson traced his career and attributed whatever success he has had to the fact that he has always worked as a team-man rather than "trying to go it alone."

Five Associations Honor Gordon Affleck

N.A.P.A. President Gordon Burt Affleck was honored at a joint meeting of five local associations held recently in Springfield, O.

Members from the Dayton, Springfield, Cincinnati, Columbus and Lima Associations attended the annual "National President's Night" affair at the Hotel Shawnee. Special guests included officers of the associations; Ted Thompson, N.A.P.A. Vice President, District 6; Russ Stark, N.A.P.A. Vice President, District 4; and Lyle Treadway past vice-president for District 6.

In his address, Mr. Affleck declared that "the genius of N.A.P.A. is the contribution of people not expecting remuneration." He urged his listeners to take full advantage of the help and service offered by the national while trying to improve their own buying.

Mr. Affleck suggested a ten-

(Please turn to page 123)

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PURCHASING

For More Information Write No. 239 on Inquiry Card—Page 32

recognized **opportunities**
for profitable fabrication

recognized hallmark
of **quality products**



brass • copper • aluminum

mill products

bearing this trademark

*made better to bring out the **BEST** in your products*

If you are planning a new product, let Scovill
Technical Service help you select the proper alloy,
temper, finish, etc., to bring out the BEST in it . . .



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starts here.

"We're guardians of the things you value most in the Mill Products you buy from Scovill... chemical and physical **UNIFORMITY**... uniformly good working qualities... inherently sound metal that never varies significantly from your specs... order after order, lot after lot.

"The methods and equipment used in Scovill Mills... ultra-modern processes like Continuous Casting of brass alloys and our "Truspec" Aluminum Sheet mill... make it possible to maintain exceptionally high metal standards.

"Still, day after day and hour after hour, we keep watch with detailed tests and inspections, using the finest mechanical and electronic testing equipment available."

Frederic M. Barry, Director, Metals Research Department



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Scovill Manufacturing Company, Mill Products Division, 99 Mill St., Waterbury 20, Conn. Phone Plaza 4-1171.

78C98

Association News

(Continued from page 120)

point self-analysis for purchasing people. "Analyze what you're doing—or not doing—" he said, "in these areas: purchase of insurance, purchase of real estate, purchase contracts, labor relations, evaluation of vendors, establishing of budgets, control of stores and warehouses, reaction to price rises, negotiation."

If purchasing people do not have—or refuse to accept—authority and responsibility in these areas, he declared, they are doing an incomplete purchasing job and do not have a rightful claim to a seat at management's table.

Tri-City Goes Behind Scene of Congressman's Office

The Tri-City Association of Purchasing Agents met recently at The Tower, Moline, Illinois. The program was arranged by Education Chairman Charles Grayson of the Davenport Newspapers. Charles Freburg, who is Congressman Fred Schwengel's secretary, talked about the behind the scenes activity in a typical congressman's office. The subject of his talk was "Congress and the Mechanics of Law Making." This is always quite interesting because many items of legislature have an effect on direct costs of material or services required by industry today.

NAPA Education Committee Appointments

General Chairman Harold A. Berry of the National Committee on Education has made the following appointments: District No. 7 Chairman, Marshall G. Edwards, Mississippi Products, Inc., Jackson, Mississippi; District No. 8 Chairman, Walter E. Willits, Conover-Mast Publications, Inc., New York, N. Y.; District No. 8 Vice Chairman, V. H. Pooler, Jr., Ingersoll-Rand Company, Painted Post, N. Y.

JANUARY 5, 1959



Quality-conscious production methods call for modern materials . . . even down to your nut-and-bolt assemblies. Now you can buy Milwaukee WASHED WASHERS to promote cleaner workmanship, cleaner product-assembly, and upgrade the morale of production workers through a thoughtful regard for personal cleanliness.

Today, all popular sizes of Milwaukee U. S. Standard and S.A.E. Washers, Rivet Burrs and Machinery Bushings are washed by a special process that removes all oil, graphite or other grime. In addition, this Milwaukee Wrot Washer washing process includes rust resistant treatment.

Since the introduction of this improved processing of Milwaukee Wrot Washers, Industry has responded with a most enthusiastic vote of approval. Many production orders specify "WASHED WASHERS" . . . but whether you specify "Washed" or not, that's the way they are supplied . . . clean washers for clean workmanship and clean workers . . . to match your highest production standards.

Specify "Milwaukee Wrot Washers" for better Quality Control.

Modern Packaging for Easier Identification . . .

In keeping with a policy of "dressing up" the washers themselves, by our special washing process, they are now put up in convenient, attractive 1-lb. and 5-lb. packages for easier identification and handling.

Your No. 1 Source for Quality Washers

WROUGHT WASHER MANUFACTURING CO.

The World's Largest Producer of Washers

2113 S. BAY ST., MILWAUKEE 7, WIS.



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AR-9516-A



Picture of worker saving money

*He's helping cut maintenance 50%
with Steiner roll towels*

Here's why roll paper towels reduce washroom maintenance costs: Controlled roll paper towel dispensers hold more towels . . . in a cabinet of any given size you can get almost twice as many towels on a roll as you can folded. Also, Steiner control cuts towel waste . . . makes supply last longer. Means your roll towel cabinet has to be refilled only half as often as a folded towel cabinet. Saves as much as 50 percent in maintenance man-hours.

Just install Steiner dispensers in your washroom on a trial basis and see how you save. Your local janitorial supplier or sanitary paper distributor can help you. For more information send in the coupon below.



STEINER COMPANY

Dept. 11C-1, 740 N. Rush St., Chicago 11, Ill.

Please send me free bulletins on Steiner controlled roll paper towel dispensers.

NAME _____
COMPANY _____
STREET _____
CITY _____ ZONE _____ STATE _____

For More Information Write No. 242 on Inquiry Card—Page 32

Suppliers

George M. Rice has been appointed automotive sales manager by **Ainsworth-Precision Castings Company, Detroit, Mich.**



George M. Rice

For the last five years Mr. Rice was in charge of sales and advertising for Ren Plastics, Inc., Lansing, Mich. Before that he had been associated with the Ford Motor Company for seventeen years in various purchasing positions.

BRIGHT STAR INDUSTRIAL BATTERIES

**lowest
cost
per
minute
of
service!**

let us
prove it.



Write for performance charts
based on A.S.A. tests.



For More Information Write No. 243
on Inquiry Card—Page 32

PURCHASING

Eugene M. Keys has been appointed division general sales manager of **Essex Wire Corporation, Transformer Division, Chicago, Ill.** Mr. Keys was formerly manager of the E. I. Guthman Division of Essex.

Baker Industrial Trucks a division of **Otis Elevator Company, Cleveland, Ohio**, has announced the appointment of **Robert J. Laws** as general sales manager. Mr. Laws joined **BAKER** in 1955 as assistant chief engineer and was appointed assistant general sales manager in 1957.

Loy Collingwood has been appointed assistant general sales manager, **Riverside-Alloy Metal Division H. K. Porter Company, Inc.**, **Riverside, N. J.** Mr. Collingwood, who became the division's midwest regional manager earlier this year, also served in the **Cleveland** and **Chicago** district offices. Before joining the **Porter** division in 1954, he spent five years as a sales representative for a **Pennsylvania** industrial firm.

C. R. Robertson, recently named sales manager by **Weller Electric Corporation, Easton, Pa.**, has been elected vice president-



C. R. Robertson

sales. Formerly a regional sales manager with **Weller Electric**, Mr. Robertson has been with the firm for more than four years. He has had wide sales experience in the industrial, hardware and automotive fields, and for ten years was a manufacturer.

JANUARY 5, 1959

CAM-ALLOY STEEL
HIGH TEST STEEL
WROUGHT IRON

Come To **CAMPBELL** For The Complete Line of **SLING CHAINS**

every type — every size
every grade — every attachment

Whatever your particular application, Campbell will deliver exactly the right assembly! All Campbell Sling Chains are available in 3 grades—Cam-Alloy Steel, High Test Steel and Wrought Iron.

**GUARANTEED
FOR A FULL YEAR!**



Send today for your free copy of
Campbell's new Sling Chain Handbook

It contains complete details on all Campbell Sling Chain equipment — together with lots of valuable information on care and use. And you'll find step-by-step instructions for ordering each type of sling chain and attachment—illustrations—specifications and working load limits for all grades.

CAMPBELL CHAIN Company

York, Pa. • West Burlington, Iowa

Warehouses: E. Cambridge, Mass. • Seattle, Wash. • Portland, Ore. • San Francisco, Los Angeles, Calif.

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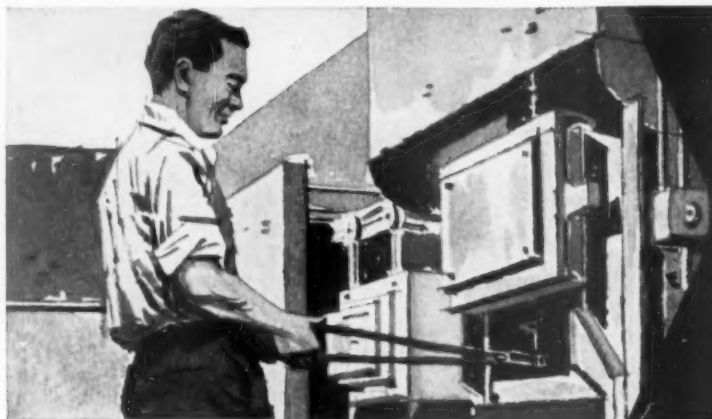
Make profit moves NOW TO COMPETE AT A PROFIT

The future is great in a growing America.

And now is the time to get ready to cash in big. Make those profit moves that will pay off in increased efficiency, higher productivity, lower costs, bigger sales, bigger profit.

Why now? Machinery, equipment, tools, materials, and manpower are more readily available—at better costs—than they will be in the foreseeable future. Quality is high. Financing is favorable. It's safe to predict that by acting NOW, you'll get most for your money.

This way, you won't simply be *competitive* when the big rush starts. You'll be COMPETITION . . . the big competition in your line.



3-way analysis . . .

**EXAMINATION, DIAGNOSIS,
PRESCRIPTION**

from 3 angles . . .

**EFFICIENCY, SUITABILITY,
COST**

gains 3 benefits . . .

QUALITY, OUTPUT, ECONOMY

**when you use Republic
3-Dimension
Metallurgical Service**

A good starting point is to take advantage of Republic's famed 3-Dimension Metallurgical Service. First, the Republic Field Metallurgist discusses problems of steel selection and production with your metallurgical and manufacturing people. His findings are supplemented by the other two members of the Republic team—the Laboratory and Mill Metallurgists. Their combined recommendations, best suited to your plant and particular problems, are passed on to your personnel. The direct result is the right steel in the right place. The direct benefit is often a better product, faster production, and lower costs.



Make your first profit move NOW. Use Republic's 3-Dimension

METALLURGICAL TEAMWORK PRODUCED THESE COMPETITIVE ADVANTAGES

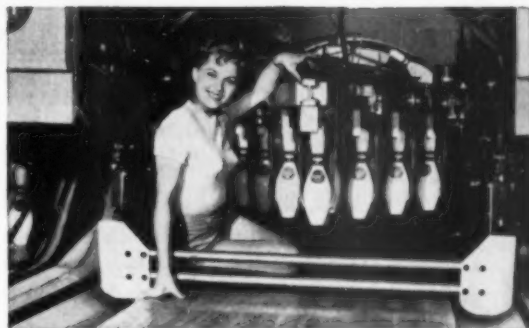
Metallurgists of Bendix Products Division, Bendix Aviation Corporation, undertook a program to improve processing deficiencies of steels used for aircraft landing gear. Republic was consulted and the program outlined. Republic's 3-D Metallurgical Service Team went into action. The field metallurgist worked closely with Bendix personnel right in their own plant under actual operating conditions. Findings were supplemented and co-ordinated by two other members of the Republic team — the laboratory and mill metallurgists. The result: development of a new grade of steel, ideal for landing gear application to withstand shock, impact, strain, and vibration.



On the advice of a Republic Pig Iron Metallurgist, Atlantic Foundry Company, Akron, Ohio, switched to Republic Chateaugay Pig Iron as the base metal for ram and cylinder castings used in hydraulic presses. The result: stronger castings, higher wear-resistance, better machinability, and the decided competitive advantage of passing along a 21% saving to customers. Atlantic's Vice President of Iron Foundry Operations says, "Another thing we like about Republic, aside from the year-in, year-out uniform chemistry of Chateaugay, is the Field Engineering Service you give. When we have a foundry problem and put in a call for help, your metallurgical engineers are Johnny-on-the-spot, talking a language we can understand. Then it's not long before the problem is solved."



At the suggestion of Republic's Steel and Tubes Division, American Machine and Foundry Company is saving \$34,000 in manufacturing the famous AMF pinspotter. They had been using steel tubing that required a boring operation on each end and centerless grinding on the O.D. Because Republic ELECTRUNITE® Mechanical Tubing easily met tolerance requirements, AMF was able to eliminate boring and grinding operations. This meant an immediate \$15,000 savings in fabricating. Another \$19,000 was saved on the cost of ELECTRUNITE compared with the tubing previously used. In uniformity, in quality, in fabricating, and in original cost ELECTRUNITE Mechanical Tubing could save you money, too. Call your Republic representative, or send coupon.



REPUBLIC STEEL



*World's Widest Range
of Standard Steels and Steel Products*

Metallurgical Service

JANUARY 5, 1959

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REPUBLIC STEEL CORPORATION
DEPT. PH -6391
1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Send more information:

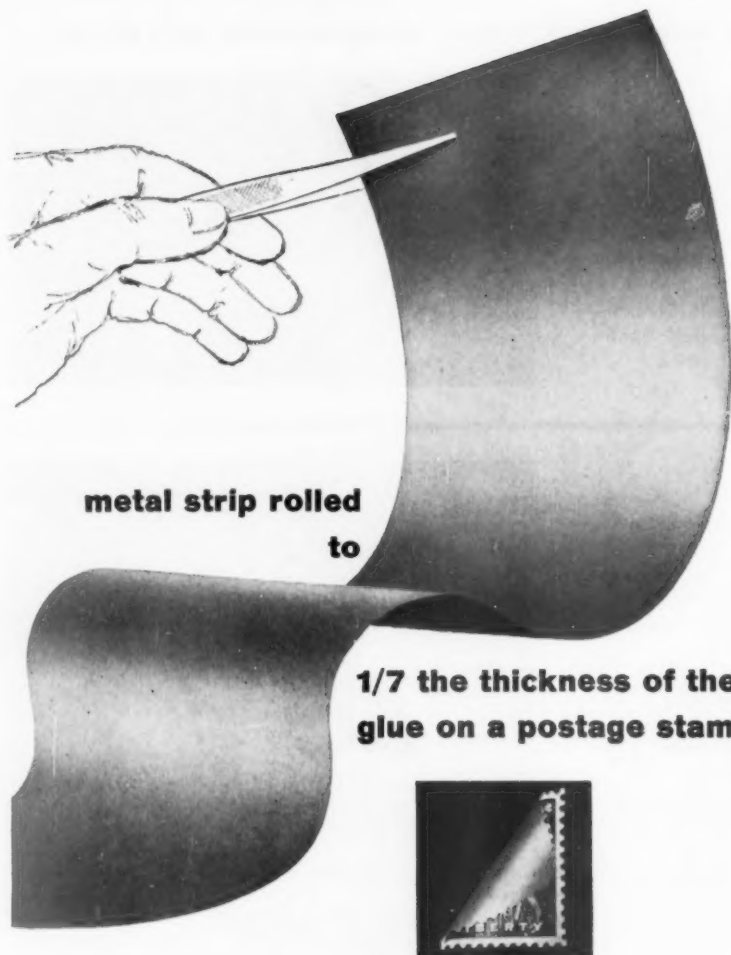
- ☐ 3-D Metallurgical Service Booklet Adv. 1009.
☐ Alloy Steels ☐ Pig Iron
☐ ELECTRUNITE Tubing

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____



**metal strip rolled
to**

**1/7 the thickness of the
glue on a postage stamp**



If you need ultra-thin metal strip and foil in virtually any alloy—here is material being produced in thicknesses ranging from .010" to .0001"! (The glue on a stamp measures .0007".)

The Precision Metals Division—an important activity of the Hamilton Watch Company—is a completely integrated metals plant geared to precision production. Strip and foil are available in practically any alloy, in thicknesses ranging from .010" to .0001". This ultra-thin strip is available in any quantities for design development or production. Moreover, special alloys can be made to your specification and furnished in any form you require.

A new 8-page facilities booklet illustrates and describes the operation of Precision Metals Division, and shows how your precision metals problems can be solved practically, economically. Write today on company letterhead for your copy to Dept. P-1.



Hamilton Watch Company

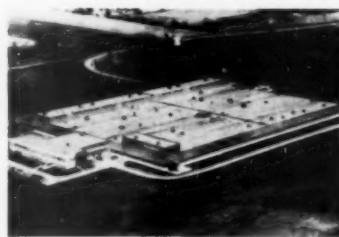
Precision Metals Division / Lancaster, Pennsylvania



Creator of the world's first electric watch

For More Information Write No. 246 on Inquiry Card—Page 32

Industry



The Westinghouse Electric Corporation's switchgear distribution apparatus department is now located in its new ultra-modern plant three miles west of **Bloomington, Indiana**. The one-story 253,000 sq. ft. factory area was designed specifically for the manufacture of power capacitors, lightning arresters, fuse cutouts, oil circuit reclosers and switches, coupling capacitors, and line traps. Although highly conveyORIZED and in certain areas automated, the plant is designed for flexibility to take care of changes in product mix and changes resulting from improved product design. In addition to the factory area, a two-story office building provides 35,000 sq. ft. of space for purchasing, sales, engineering, industrial relations, accounting and administration. The plant is located on a 148-acre tract and was designed with future expansion in mind.

Raybestos-Manhattan, Inc., has announced the moving of its **San Francisco** district warehouse and offices from 131 Mission St. to new and larger quarters at 168 Beacon St., **South San Francisco, Calif.** The larger facilities were needed to provide better service for customers of the several divisions now represented there. These divisions are: Manhattan Rubber Division, Raybestos Division, Packing Division, Asbestos Textile Division, Plastic Products Division.

**FOR MORE INFORMATION
USE INQUIRY CARD
PAGE 32**

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on Inquiry Card—Page 32→



The case of the balking bridge

It was a dandy day for dedicating a bridge. Which was all to the good since Hizzoner — Mayor Philip E. Bodkin — was about to officially open the Philip E. Bodkin Lift Bridge — 5 million bucks worth of steel, concrete, electrical cables and motors.

As Hizzoner's assistant, I had whipped up a little ceremony complete with speeches, music and ribbon-snipping. As a smasheroo finale, the big electric motors would ease the lift section down into place and a motorcade, with Hizzoner at the helm, was to roll

over the bridge into Smedley.

Well, the speeches came off splendidly. Hizzoner's niece hacked the ribbon apart. And as the Firehouse Band blatted out a fanfare, everyone gazed expectantly at the lift section, waiting for it to descend in glory.

But it didn't descend. In glory or anything else. Even though Hizzoner huffed and puffed, stormed and hollered, it didn't come down until two days later when some defective electric cable had been replaced. But by that time, Hizzoner wanted to forget

the whole thing. 'Specially when I reminded him that the guilty power cable had been a bargain special supplied by his Cousin Al over the objections of the engineers, who had specified Okonite.

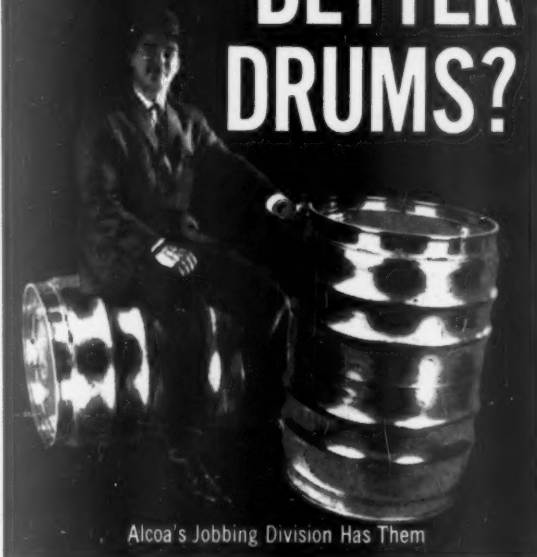
Next day, however, Cousin Al was back working at the filling station and the whole darn electrical system of the Philip E. Bodkin Bridge was being rewired with Okonite Cable.

And, for some reason, Hizzoner keeps about three inches of heavy-duty Okonite Cable on his desk for a paperweight.



where there's electrical power... there's **OKONITE CABLE**

NEED BETTER DRUMS?



Alcoa's Jobbing Division Has Them

ALUMINUM, 55-gallon, general-purpose shipping drum weighs only 33 pounds, but ingenious design and high-strength Alcoa alloy make it ruggedly resistant to shock and pressure. Nonscaling, nonsludging, noncontaminating and chemically neutral to a wide range of commercial liquids, including food products.

LIGHT, STRONG Alcoa® Aluminum shipping drums increase payloads, reduce dead weight and save on labor costs of handling and cleaning for re-use. They are made in a wide variety of types and sizes.

FREE TO MANUFACTURERS: In addition to such "standard" items as shipping drums for industry, Alcoa's Jobbing Division has the world's finest aluminum fabricating facilities for subcontracting to your order any aluminum components for anything you make. Sixteen-page free booklet describes how these facilities can save you tooling-up costs, lighten your production load and generally cost you less than if you shouldered the whole job yourself. For your copy, write or just clip and mail the coupon.



Your Guide to the Best
in Aluminum Value

Watch

"ALCOA THEATRE" Alternate Mondays NBC-TV
"ALCOA PRESENTS" Every Tuesday ABC-TV

ALUMINUM COMPANY OF AMERICA

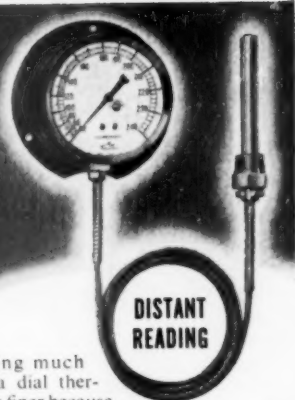
1868-A Alcoa Building, Pittsburgh 19, Pennsylvania

Please send my free copy of Alcoa Aluminum Fabricating Facilities.

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COMPANY _____
STREET ADDRESS _____
CITY _____ STATE _____

For More Information Write No. 247 on Inquiry Card—Page 32
130

The dial thermometer at its best



Something much finer in a dial thermometer: finer because it is the bourdon tube type of thermometer at its best...embodies the greater precision and lasting accuracy of the Marsh Pressure Gauge.

Both vapor tension and gas-filled types are available in either distant reading or rigid stem types. In the broad Marsh line you have a complete selection of temperature ranges, case sizes, styles, and finishes.

Ask for the Thermometer Catalog

MARSH

MARSH INSTRUMENT CO. Sales Affiliate of Jas. P. Marsh Corp.

Dept. G, Skokie, Ill.

Marsh Instrument & Valve Co., (Canada) Ltd.
8407 103rd St., Edmonton, Alberta, Canada
Houston Branch Plant, 1121 Rutledge St.
Sect. 15, Houston, Texas



RIGID
STEM

For More Information Write No. 248 on Inquiry Card—Page 32

GUARANTEED

to give
drip-tight
leak-proof
seal



greatest name
in unions

DART

Available through your local distributor.

For over 55 years the firm guarantee back of each and every DART UNION sold has been — "if one should leak through we will give you two"! The record reveals that less than 1 in every 100,000 has proven to be faulty. The extra wide bronze to bronze seats, precision ground to a true ball joint, mounted in heavy malleable iron pipe ends and protected by an extra heavy union

nut, make a drip-tight, leak-proof connection WITHOUT EXCESSIVE WRENCHING time and time again. Guarantee positive tight connections and extra long service on your pipe lines by using the DART GUARANTEED UNION.

Yours on request: Descriptive brochure on Dart Unions and Union Fittings.

DART UNIONS Products of DART UNION COMPANY PROVIDENCE 5, R. I.

GENERAL
SALES
AGENT

THE **Fairbanks** COMPANY

393 LAFAYETTE STREET, NEW YORK 3, NEW YORK
BRANCHES: NEW YORK 3
PITTSBURGH 22 • BOSTON 10 • ROME, GEORGIA

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PURCHASING

the exclusive
FLEX-A-FOAM
DUST MASK

(no other product like it
... anywhere)

Here's everything that
management and worker alike
could possibly want in
a dust respirator!



1. **Form-fitting design:**
Self-adjusting to any size and shape of face without pressure or irritating discomfort.
2. **Attractive styling:**
Smartly designed to suit the most discriminating wearer.
3. **Filtering efficiency:**
Filters non-toxic dusts 100 times smaller than the eye can see.
4. **Easy-breathing comfort:**
Easier to breathe through and talk through than an ordinary pocket handkerchief.
5. **Feather-like weight:**
Weighs only 1 ounce complete.
6. **Simplicity and economy:**
Only 4 tough, long-wearing inter-locking parts — all washable. Pure latex filter outwears throw-away type more than 100 to 1.

No wonder FLEX-A-FOAM is the one dust respirator workers welcome and WEAR!



FLEXO Products, Inc., Westlake, Ohio

For More Information Write No. 250 on Inquiry Card—Page 32

valuable
information
on molded

RUBBER

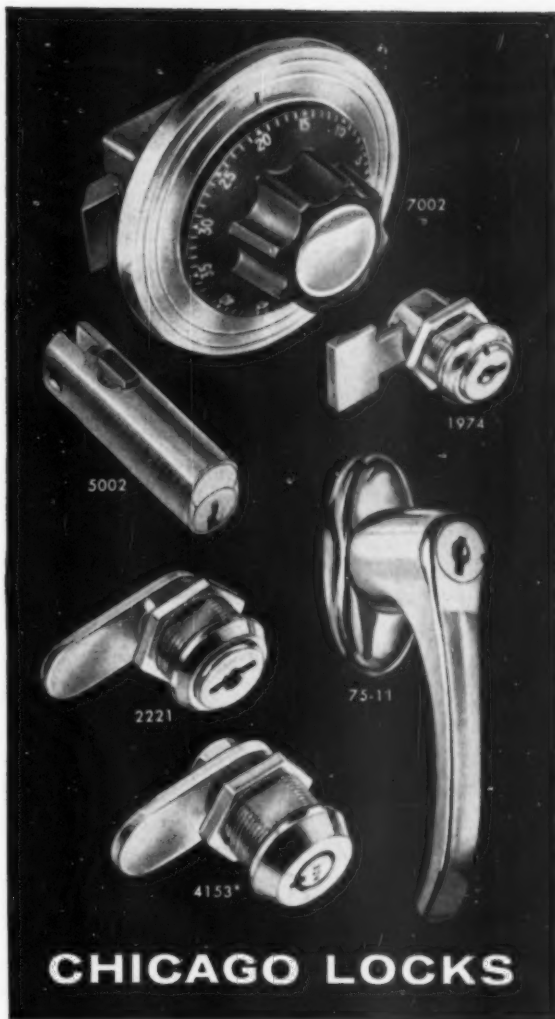
New Paeco catalog shows exactly what you need to get a quick, accurate quotation. Saves you time, energy, money; gives you valuable reference material on one of America's leading rubber companies. Tells you about molded rubber and how it is made. No charge to purchasing departments.



PAECO RUBBER CO.
204 WEST LAKE ST., RAVENNA, OHIO

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JANUARY 5, 1959



Rugged and Reasonable for any Application

Here are a few of the many precision-made Chicago Locks available. They're engineered for maximum security — made of carefully selected and tested metals. And they emphasize attractive design and compactness.

Whatever your needs, you're sure to find a Chicago Lock that's perfect for your purpose . . . and priced right, too.

*One of the ACE Lock line—Maximum security locks with the exclusive round keyway.

Write today for your **FREE** catalog showing, in detail, the entire Chicago Lock line.

CHICAGO LOCK CO.
2052 N. Racine Avenue • Chicago 14, Illinois

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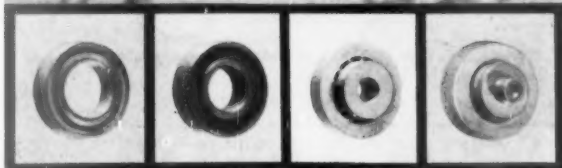
**analyzing
values?**



**Where moderate speeds
and loads are involved...**

**investigate
GENERAL
unground
BEARINGS**

Write for your copy of the General catalogue.



GENERAL BEARING COMPANY

42 Roselle Street Mineola, New York

For More Information Write No. 253 on Inquiry Card—Page 32
132

THIS is No Ordinary Power Hack Saw Blade



This is the *unbreakable* MARVEL High-Speed-Edge Hack Saw Blade—the first bi-metal blade—invented, developed and introduced by MARVEL. This blade was developed to cut any material from the free machining steels to the toughest alloys, fast, accurately and economically. Just one type blade to handle any job—no switching blades to cut different materials.

MARVEL blades can be tensioned from 200% to 300% more taut than ordinary blades. This advantage permits heavier feed pressures to be used without deflection or fear of breakage.

This rugged cutting tool assures outstanding economy, accuracy, long life and complete safety—it is *unbreakable*.

Ask for MARVEL Blades by name and you can be sure you're getting the best. Leading Industrial Distributors have them in stock. Write for latest Cutting Tool Bulletin.

FB-1021

ARMSTRONG-BLUM MFG. CO.

5700 W. Bloomingdale Ave., Chicago 39, U.S.A.

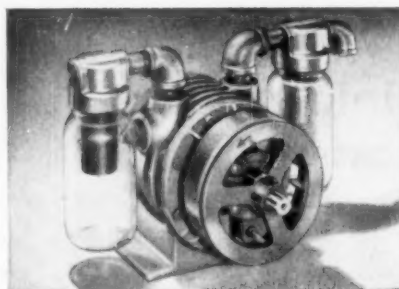
Manufacturers of the Outstanding MARVEL Metal Saws

For More Information Write No. 254 on Inquiry Card—Page 32

ROTARY AIR
GAST
PRODUCTS

**Runs
without
oil —**

Model 3040 Oil-less Air Pump.
Vac. to 20",
pressure to 10
p.s.i. To 24
c.f.m., 1/4 to
1 1/2 h.p.



Oil-free air blast with carbon-vane

GAST  AIR PUMPS

**Other
Oil-less
Models**

Built in six
smaller sizes,
some with inte-
gral motors —
1/12 to 1/2 h.p.

See Catalog
in Sweet's
Design File

Need compressed air that's *absolutely free* of oil mist? A Gast Oil-less Air Pump may be your answer! Air flow *can't* contain oil vapor, because no oil is used.

You also eliminate lubrication problems when vacuum or pressure pump is mounted in a hard-to-service location.

Four carbon vanes lubricate themselves. Ball bearings are grease-sealed for life and separated from pump chamber by a ventilated space. Built in 7 models.

Write for Oil-less Bulletins 152A and VP-356.
**GAST MANUFACTURING CORP., P.O. Box
117-X, Benton Harbor, Michigan**

**GAST
ROTARY**

- AIR MOTORS TO 7 H.P.
- COMPRESSORS TO 30 P.S.I.
- VACUUM PUMPS TO 28 IN.



"Air may be your answer!"

For More Information Write No. 255 on Inquiry Card—Page 32
PURCHASING

All-purpose liquid detergent

Mop it on...



**Walk
away**



Cindet

Let Cindet suds lift the dirt for you

CINET does more cleaning with less effort and less material; works in hard or soft water.

CINET outstrips them all as a wax stripper. Cleans walls, woodwork, tile, porcelain, glass, metal.

CINET does a cleaner job—cuts labor costs! Mop it on, walk away, come back and pick it up.

CINET does the job with no drag because dirt particles chatter, lift and ride high.

For free sanitary survey of your premises ask your Dolge service man

DOLGE
WESTPORT, CONNECTICUT

For more information Write No. 256 on Inquiry Card—Page 32

55 hose types to meet your needs

There is an Aeroquip Hose Line for every industrial application . . . for all fluids . . . for hot or cold temperatures . . . for high or low pressures.

Any Aeroquip Distributor, listed in your yellow page directory, knows which hose line is best for you. And you can be sure it will be TOPS in quality.


Aeroquip
**FLEXIBLE
HOSE LINES**

AEROQUIP CORPORATION, JACKSON, MICHIGAN

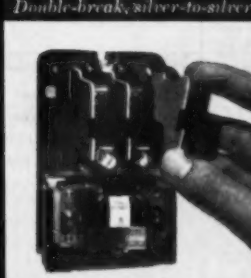

Industrial Division, Van Wert, Ohio • Western Division, Burbank, Cal.
Aeroquip (Canada) Ltd., Toronto 19, Ontario

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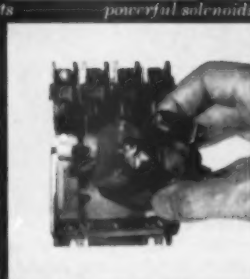
JANUARY 5, 1959

Double-break, silver-to-silver contacts

"molded" coils protect contacts

powerful solenoids

molded coils minimize "burnouts" — fast, easy installation

**THIS IS A
RELAY YOU CAN STAKE
YOUR REPUTATION ON**

Every aspect of Ward Leonard bulletin "HR" relays is designed for maximum reliability . . . these are components you can buy, install and then forget. They're engineered for industrial and electronic applications.

Consider the powerful AC or DC solenoids, just one of the features of every HR relay. Solenoids assure fast, consistent, long-life operation. The "E-I" laminated magnet armature is free-floating and self-aligning to minimize noise level. DC solenoids feature exceptionally fast operation. Nylon armature guides minimize operational friction. All AC and DC power plants are readily interchangeable.

2 to 8 pole "HR" relays are but one of the five W/L lines of industrial power relays . . . all designed with emphasis on reliability. Write for bulletin 4470, Ward Leonard Electric Co., 50 South Street, Mount Vernon, N. Y.

9-2



WARD LEONARD
ELECTRIC COMPANY • MOUNT VERNON, N. Y.

Rebuilt & Engineered
Controls Since 1892



RESISTORS



RHEOSTATS



RELAYS



CONTROLS



DIMMERS

For More Information Write No. 258 on Inquiry Card—Page 32

133

Employment Service

PURCHASING DIRECTOR COUNTY OF MILWAUKEE

Applications may be obtained from Milwaukee County Civil Service Commission, Room 206, Courthouse, Milwaukee 3, Wisconsin. Filled in application must be returned by January 19, 1959. Eight years experience in large volume purchasing of a wide variety of materials, supplies and equipment for a large public jurisdiction or private business, four years of which must have been in a responsible administrative or supervisory capacity. Salary range is \$840 to \$1009 per month.

Experience: Five years purchasing and expediting. Now purchasing agent for leather, industrial supplies, paper & board, shipping containers, steel & aluminum, canvas goods, office supplies & equipment. Production and inventory control; supervision of receiving department. Prefer Long Island-Queens area.

Education: B. A. Degree, major-economics. Courses in purchasing and industrial Relations.

Write: Box 292

Experience: Twelve years diversified purchasing for medium size door and hardware manufacturer. Responsible for procurement of all materials, equipment, supplies, and services. Heavy purchases of lumber and steel. Experience in inventory control and traffic and general administration and personnel work.

Education: A. B. Degree

Will relocate.

Write: Box 293

Experience: Fourteen years in capital equipment, buildings, machinery, repairs and services purchasing. Thoroughly grounded in purchasing procedures, specification writing, evaluation of bids and expediting. 14 years previous training as general manager small business. Can make decisions, handle office work, type.

Education: BS Commerce and Finance. Two years Chemical Engineering.

Will relocate.

Write: Box 294

Experience: Purchasing executive, 14 years experience in industrial procurement, specializing in appliances and Government Contracts. Able to setup department systems, procedures and value analysis. Plant phase out requires relocation.

Write: Box 295

Experience: Over seven years in purchasing and production control; expediting of purchased material, pricing, securing quotations, limited buying. Five years of teaching accounting and business management in private business school. Three years personnel clerk in U.S. Army. Two years general office experience.

Education: B.S., Commercial Education, M.S., Commercial Education.

Will relocate.

Write: Box 296

Experience: Two years inventory control. 3 years buyer of mill supplies. 5 years buyer of warehouse steel and fabricated parts. All these positions held with large fabricator of railroad equipment and process equipment for chemical and petroleum industry.

Education: 4 years university night school business courses. Extension courses in engineering drawing and production control.

Will relocate.

Write: Box 297

Experience: Ten years purchasing and purchasing administration—all phases. Presently assistant director of a medium sized purchasing operation. Member NAPA and NAEB.

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacements or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence to Employment Service Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, New York.

Education: AB Degree—Science MS Degree—Economics

Will relocate.

Write: Box 298

Experience: Five and a half years. as purchasing agent for a national manufacturing plant and supply house employing 150 people. Buying material such as paper, cloth, steel, castings and component used in fabrication of a diversified product line. In close contact with production dept. so schedules will not be upset by tardy deliveries. Adjusting order quantities determined by inventories and sales reports to keep resale line in balance. Correspondence with suppliers to locate materials to improve the product line.

Education: One and a half years in quality and quantity chemistry.

Will relocate.

Write: Box 299

Experience: Twelve years engineering & purchasing background. Presently assistant to purchasing agent with firm specializing in industrial furnaces, gas plant equipment, conversions & pipe lines. Previously employed in engineering department of an integrated steel plant and worked on all phases of plant engineering including maintenance expansion & construction both in the office & in the field.

Education: Courses in mechanical drafting—strength of materials

Will relocate.

Write: Box 300

Experience: Fully experienced all phases industrial purchasing for a metal-working and assembly plant. Purchased aluminum, steel, porcelain parts and supplies. Supervise and administer department. Represent management both within and without company. Assistant P.A. reporting to director of purchasing. Buy or supervise purchases of \$5 million plus.

Education: A.B. Business Administration, M.A. Industrial Management.

Will relocate. Prefer Detroit area.

Write: Box 301

Experience: More than three years as control chemist in an internationally known company, while earning a Master's degree in business administration. Duties involved supervision of control laboratory on shift, performance of quantitative analyses, and maintenance of customer specifications.

Education: A. B. Degree in chemistry and economics M.B.A. Degree in Marketing.

Write: Box 302



In-Stock Service

on Carpenter Stainless
No. 20 and No. 20Cb

forms, sizes and shapes
for most corrosion problems



• Besides keeping our warehouses fully stocked with all forms of Carpenter Stainless No. 20 and 20Cb, we maintain fast, modern facilities to make up and speed your orders to you . . . no matter what your deadline. *Our service teams are geared to handle your most urgent delivery needs.*

Available from stock in sheet, plate, pipe, tubing, strip, bars, wire and billets, Carpenter Stainless No. 20 and 20Cb are as easily fabricated as ordinary stainless steels. You get long-life control of sulphuric acid and other severe corrodents in a hurry when you order Stainless No. 20 and 20Cb. One installation of this Super-Stainless will outlast most other corrosion-resistant alloys . . . economically. Contact our nearest office or authorized distributor (located in over 40 cities, coast to coast). Write on your company letterhead for technical bulletin 108A. The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

*your master key to cost-saving
corrosion control*



Stainless No. 20 & 20Cb

Carpenter Stainless No. 20 bars, strip, wire and billets are available also from The Carpenter Steel Company, Reading, Pa.

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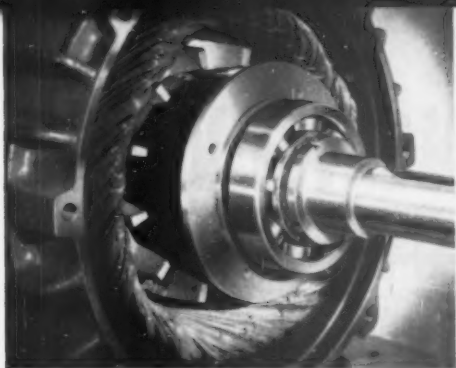


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For More Information Write No. 260

on Inquiry Card—Page 32—

PURCHASING



HEAVY DUTY BALL BEARINGS... The ball bearings used in these motors are of the highest quality, with more than ample capacity to provide long trouble-free service under heavy loads.



BEARINGS CAN BE RELUBRICATED... Original factory lubrication will last for years in normal service—but convenient grease plugs are provided to permit relubrication that adds to motor life under severe conditions.



SECURELY SEALED FOR LOW MAINTENANCE... Both ends of these motors have running shaft seals to keep the bearings clean. Bearing housings are effectively sealed to prevent escape of grease.

Wagner Totally Enclosed Motors *Designed to give you Extra Protection*

**PROTECTED
AGAINST
CORROSIVE...
ABRASIVE
AND
EXPLOSIVE
ELEMENTS**

WM50-7

Here are motors that will deliver full-rated horsepower under the toughest service conditions—that will help you keep your production rates up, and give you the kind of dependable, continuous operation that is so important to automation.

Type EP Motors are fully protected against damage from corrosion, dust, abrasives, fumes, steel chips or filings. Type JP is explosion proof as well—is designed and approved for use in explosive atmospheres.

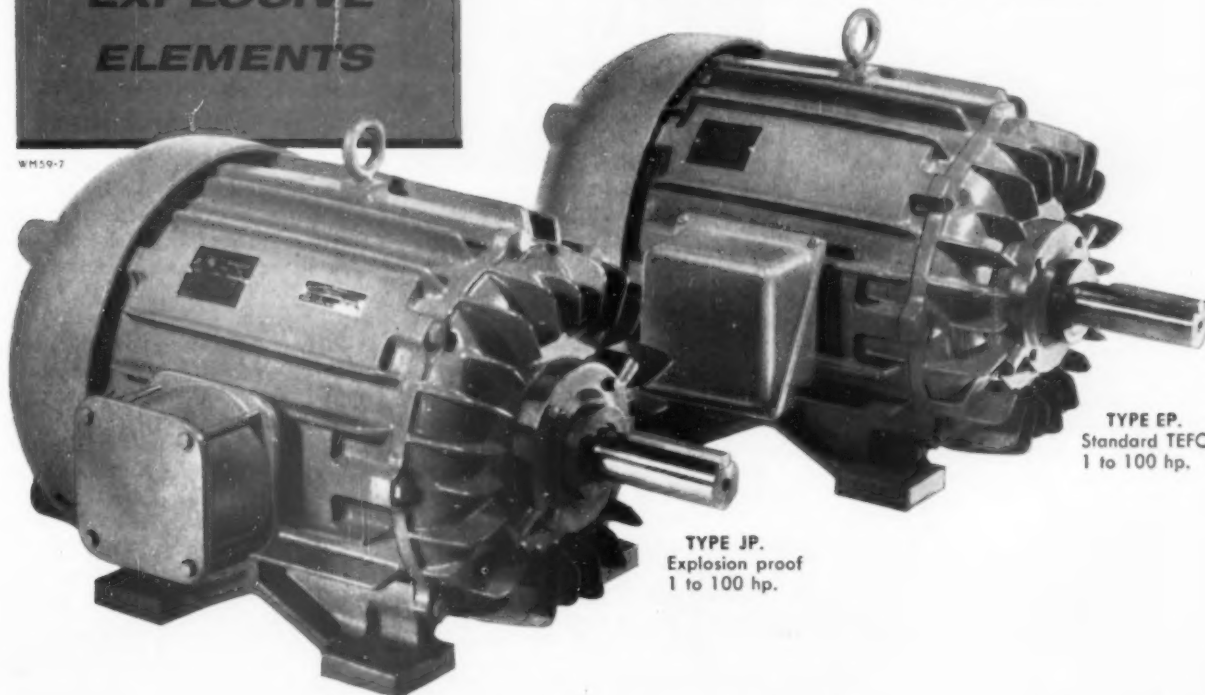
Integral ratings, 1 through 100 horsepower, are built in the latest NEMA frames, 182 through 445 US, with ribs that add mechanical strength and increase the surface cooling area.

Let your Wagner Sales Engineer show you how these protected motors can bring you savings on initial motor costs, maintenance costs, and in continuity of operation.

Branches and Distributors in All Principal Cities

Wagner Electric Corporation

6360 Plymouth Ave. • St. Louis 14, Missouri



TYPE EP.
Standard TEFC
1 to 100 hp.

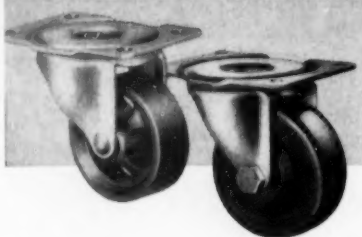
TYPE JP.
Explosion proof
1 to 100 hp.

OTHER FRAME SIZES AVAILABLE IN RATINGS THROUGH 500 HP.

MATERIALS-HANDLING NEWS

NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS

"#1" caster 3" wheel load capacities
Hard tread: 225 lbs. Soft tread: 100 lbs.



Many factors affect caster load capacities

Types of wheels, floor conditions, speed of travel must be considered in selecting casters. Bassick conservative load ratings protect users and are based on average operating conditions.

HARD VS. SOFT WHEELS

Soft rubber tread wheels protect floors but limit load capacity. Good rule of thumb is that soft tread wheels will carry half the load carried by a hard tread wheel of the same size. Where floor protection is desired, go to a larger size resilient tread wheel.



Your Distributor has New Products

These new or improved products developed by Bassick last year may aid materials-handling in your plant.

Light Duty Floating Hub caster shown above for loads from 50 to 150 lbs.

Rust-resistant Zinc plating on all Bassick formed steel truck casters... at no extra cost.

New improved "non-marking" composition Atlasite wheel almost as strong as steel, far kinder to floors.

Keeping you up to date on new product developments is one of many ways your local Bassick distributor can help you.



Semi-steel wheel
where floor
protection is
unimportant

Improved
Atlasite wheel
won't mark floors,
has high
load capacity

Rough floors cut load ratings

Select a wheel large enough to ride over tracks, door sills, elevators, other obstructions. For rough floors or in areas where there are objects or debris on the

floor, use a larger wheel with extra load capacity to secure proper ease of rolling and satisfactory performance. Two types of caster wheel are shown above.



Now it moves... Now it stands still

Sometimes it's convenient to move a machine to the job and then hold it steady in operation. R. R. Donnelly & Sons Company, a Chicago printer, solved the problem by putting this package-tying machine on Bassick casters (for movement) equipped with combination wheel brakes and swivel locks (for standing still). Might be an idea here for you.



10" Series "93".
Capacity
10,000 lbs.

10" Series "FS".
Capacity
500 to 1000 lbs.

Speed and power affect carrying capacities

This heavy duty series "93" caster will support a static load of 80,000 lbs., but nothing like that load in action. Its rated carrying capacity, for normal slow movement of heavy equipment, is a conservative 10,000 lbs. or 15,000 lbs., for 8" and 10" sizes.

It is not designed to stand the strain of fast power pulled applications, however. These jobs, where speed may exceed 5 mph, normally call for a Trailer type of caster such as the Floating Hub swivel trailer caster rated at 500 to 1000 lbs. per caster.

D 1



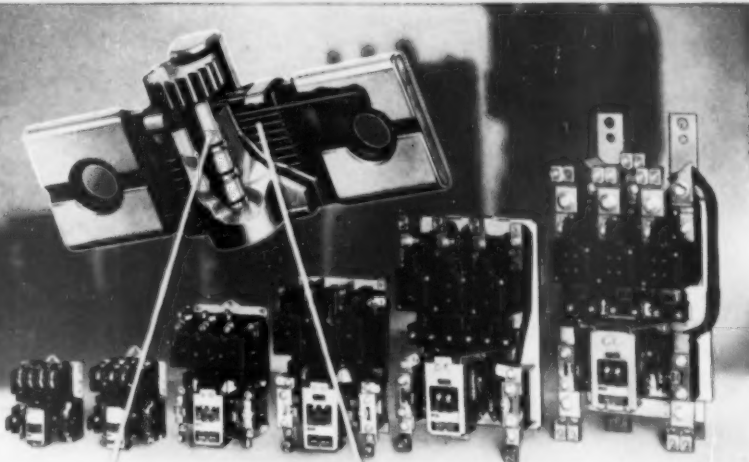
THE
BASSICK COMPANY
BRIDGEPORT 5, CONN.
IN CANADA:
BELLEVILLE, ONT.



For More Information Write No. 261 on Inquiry Card—Page 32

When you buy Motor Starters — YOU PAY FOR OVERLOAD PROTECTION

BE SURE YOU GET IT!



Heat-responsive element (solder pot) provides accurate response to overload, yet prevents nuisance tripping.

Heat-producing element is an integral part of overload unit. It's permanently joined to solder pot, can't become misaligned.

Only ONE-PIECE Overload Relays can give 100% Protection Only with ONE-PIECE construction can you know you've installed the heater correctly. Only with ONE-PIECE construction can you know the heater is exactly centered, or properly positioned, so that it performs according to its rating. Only with ONE-PIECE construction can you know your starters will not operate without the thermal units properly installed. Only with ONE-PIECE construction can you know your motors have full protection.

Only Square D has ONE-PIECE Construction ONE-PIECE construction *eliminates* any possibility of heater misalignment. Square D melting alloy thermal overload relays can be installed only one way. They are tamper-proof. They are factory-assembled, are *individually* calibrated and tested. Repeated tripping will not affect their accuracy.

Insist on Square D starters with melting alloy thermal overload relays

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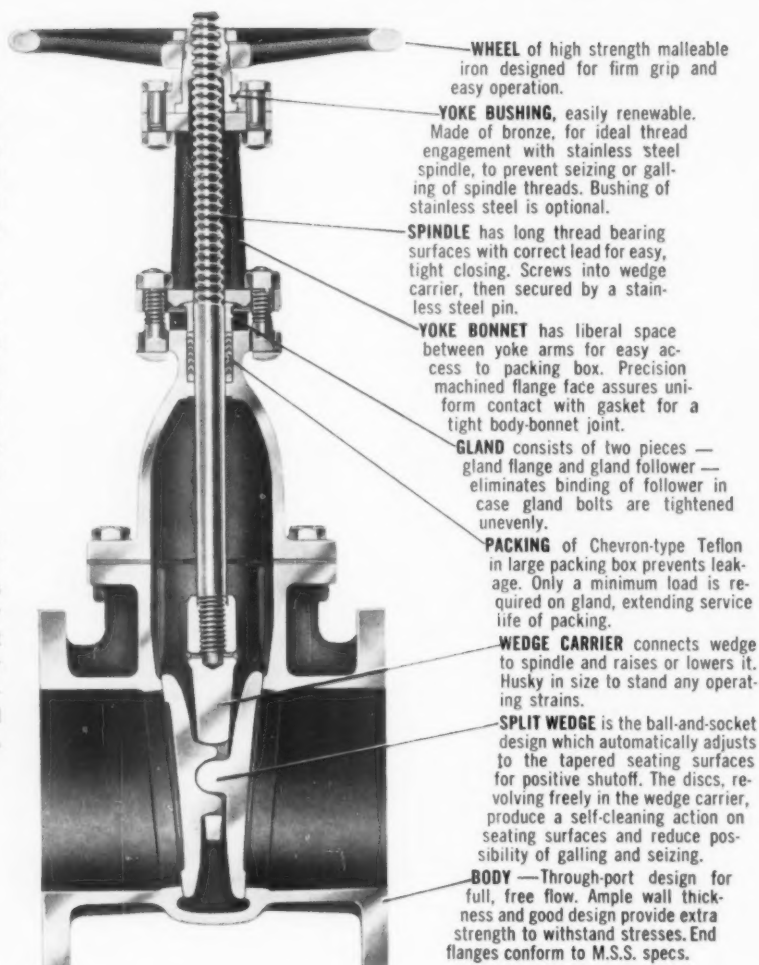
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